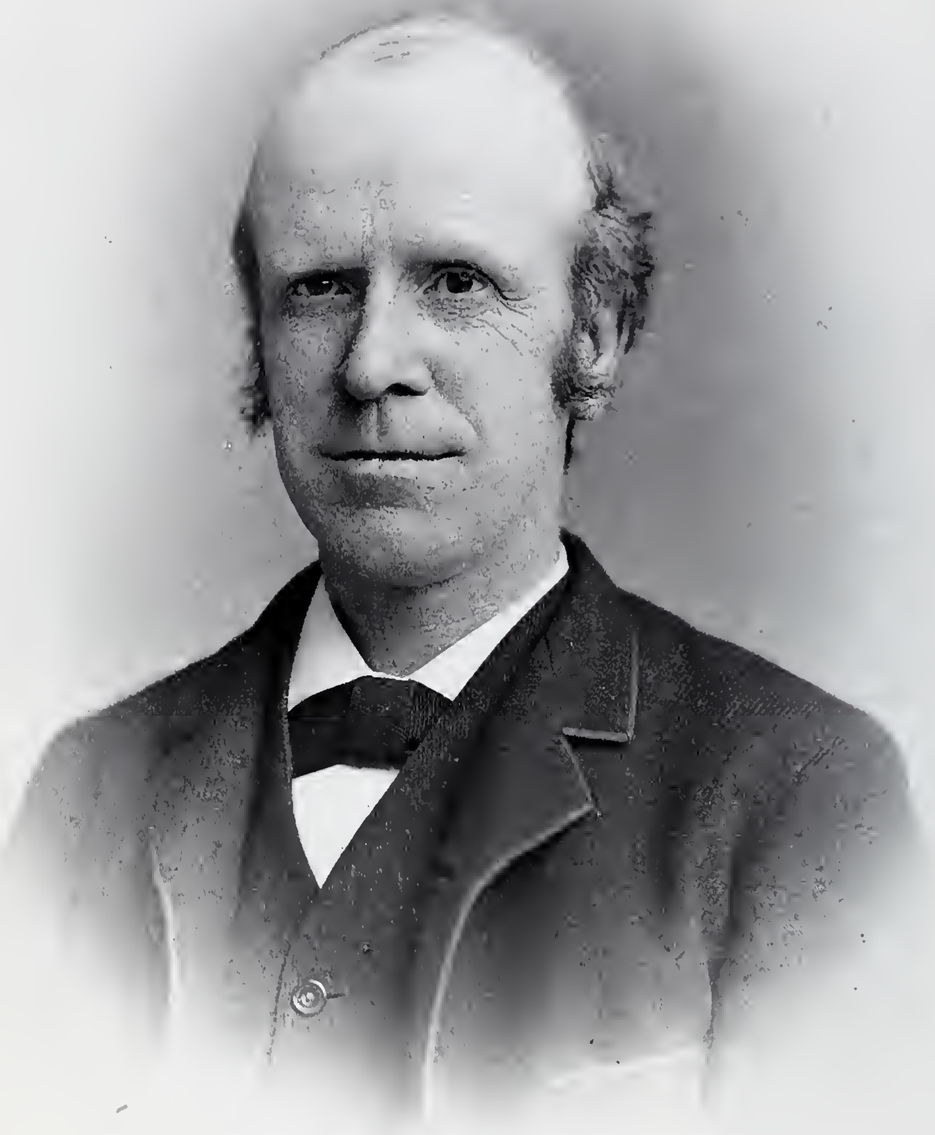

F. GUTEKUNST. PHOTOTYPE. PHILAD'A.

Edw. C. Ines

3

TWENTY-FIRST

ANNUAL REPORT

OF THE

ALUMNI ASSOCIATION,

WITH THE EXERCISES OF THE

64TH COMMENCEMENT

OF THE

PHILADELPHIA COLLEGE OF PHARMACY,

FOR THE YEAR 1884-1885.

THE ASSOCIATION WAS ORGANIZED JULY 15, 1864.
(21st Anniversary.)

PHILADELPHIA:
1885.

OFFICERS OF THE ASSOCIATION,

FOR 1885-1886.

PRESIDENT,

HOWARD B. FRENCH, PH. G., 410 Callowhill St.
(Class of 1871.)

FIRST VICE-PRESIDENT,

WALLACE PROCTER, PH. G., 900 Lombard St.
(Class of 1872.)

SECOND VICE-PRESIDENT,

DAVID W. ROSS, PH. G., 580 East Cumberland St.
(Class of 1877.)

TREASURER,

EDWARD C. JONES, PH. G., S. E. Cor. 15th and Market Sts.
(Class of 1864.)

RECORDING SECRETARY,

WM. E. KREWSON, PH. G., 1829 N. 8th St.
(Class of 1869.)

CORRESPONDING SECRETARY,

CLEMENT B. LOWE, PH. G., N. E. Cor. 9th and Vine Sts.
(Class of 1884.)

EXECUTIVE BOARD,

THOS. H. POTTS, PH. G. (1 yr.), S. E. Cor. Broad and Parrish Sts.
(Class of 1871.)

C. CARROLL MEYER, PH. G. (1 yr.), 1802 Callowhill St.
(Class of 1873.)

LUCIUS E. SAYRE, PH. G. (2 yrs.), S. W. Cor. 18th and Market Sts.
(Class of 1866.)

JOS. W. ENGLAND, PH. G. (2 yrs.), S. W. Cor. 10th and Catharine Sts.
(Class of 1883.)

DR. CHAS. A. WEIDEMANN, PH. G. (3 yrs.), S. E. Cor. 22d & Green Sts.
(Class of 1867.)

WM. N. STEM, PH. G. (3 yrs.), S. W. Cor. 20th and Callowhill Sts.
(Class of 1873.)

TRUSTEE OF SINKING FUND,

THOS. S. WIEGAND, PH. G., 3742 Market St.
(Class of 1844.)

ORATOR FOR 1886,

ALBERT E. EBERT, PH. G., 186 W. Madison St., Chicago, Ill.
(Class of 1864.)

PROCEEDINGS

OF THE

TWENTY-FIRST ANNUAL MEETING

MARCH 20, 1885.

The Twenty-first Annual Meeting of the Alumni Association of the Philadelphia College of Pharmacy, was held in the Alumni Room of the College, No. 145 North Tenth street, Philadelphia, on Friday afternoon, March 20, 1885.

The meeting was called to order at 2.30 o'clock, P. M., by the President, Dr. Chas. A. Weidemann, Ph. G.

The following members were present at the meeting, viz.:—

Chas. W. Hancock,	Class	1857,	West Philadelphia, Pa.
Adolph W. Miller, M. D.,	"	1862,	Philadelphia, Pa.
Edward C. Jones,	"	1864,	"
Lucius E. Sayre,	"	1866,	"
Chas. A. Weidemann, M. D.,	"	1867,	"
Wm. E. Krewson,	"	1869,	"
J. Willetts Worthington,	"	1871,	"
Thos. H. Potts,	"	1871,	"
Wallace Procter,	"	1872,	"
Wm. Nelson Stem,	"	1873,	"
C. Carroll Meyer,	"	1873,	"
Wm. I. Lerch,	"	1873,	"
Henry Trimble,	"	1876,	"
David W. Ross,	"	1877,	"
Jacob S. Beetem,	"	1878,	Wilmington, Del.
Roland D. Jones, M. D.,	"	1879,	Philadelphia, Pa.
Wm. J. Pechin,	"	1880,	"
John H. Hahn,	"	1881,	"
George Goebel, Jr.,	"	1881,	Jersey City, N. J.
David R. Reed,	"	1881,	Asbury Park, N. J.
Henry L. Green,	"	1882,	Philadelphia, Pa.
Susan Hayhurst, M.D.,	"	1883,	"
Jos. W. England,	"	1883,	"
Clement B. Lowe,	"	1884,	"
Wm. L. Cliffe,	"	1884,	"

George Fitzgeorge,	Class 1884,	Trenton, N. J.
Elias E. Riggs,	" 1885,	Hightstown, N. J.
Henry Wegener, Jr.,	" 1885,	Oshkosh, Wis.
Henry L. Stiles,	" 1885,	Camden, N. J.
James S. Hunter,	" 1885,	Pittsburgh, Pa.
Jos. J. Eldridge,	" 1885,	Cape May City, N. J.
Leopold Peters,	" 1885,	Fulton, Ill.
A. Lincoln Serfass,	" 1885,	Easton, Pa.
Wm. C. Thompson,	" 1885,	Coatesville, Pa.
Adolph Emil Gebhard,	" 1885,	Muskegon, Mich.
Harry Swain,	" 1885,	Philadelphia, Pa.
Fred'k P. Sher,	" 1885,	"
Daniel H. Hassler,	" 1885,	"
Theo. Feairheller,	" 1885,	"
Henry C. C. Maisch,	" 1885,	"
Jos. M. Malatesta,	" 1885,	"
Fred'k H. Davis,	" 1885,	"
Thos. Dunbar, Jr.,	" 1885,	"
Robt. C. Cadmus,	" 1885,	"

And Chas. B. Whilden, Charleston, S. C., Class of 1885, as a visitor.

The Secretary read the minutes of the last Annual Meeting.

Mr. W. N. Stem stated that there was one correction in the minutes to be made, which was, that the committee on the Reed case was not appointed at the Annual Meeting, but subsequently.

The Secretary stated that although the names were not announced at the meeting, yet the retiring President, Mr. L. E. Sayre, appointed the committee afterwards and the minutes were kept open for the names of the committee, and each member was notified of their appointment and all declined except one member, Mr. H. A. Newbold, and the new President appointed the present committee as the minutes of the Executive Board would show.

Mr. Thos. H. Potts moved that the minutes be approved. So ordered.

The President then called for the reading of the minutes of the meetings of the Executive Board during the year.

The Secretary stated he would read them, but it would take about one hour to do so, and as we had a large amount of business to transact, he would suggest they be omitted.

Mr. Henry Trimble moved that the reading of the minutes of the Executive Board be dispensed with, which was duly seconded by Mr. John H. Hahn and carried.

The President then delivered his Annual Address which is as follows:—

FELLOW ALUMNI:—

In addressing you at this time, it is cause for great gratification that the Alumni Association, during the past year, has maintained its well-earned reputation as a progressive organization.

All of its interests have been well cared for during the year by the Executive Committee. They have held four regular, and one special meeting, which have been well attended by the members. Their proceedings will be read in detail by the Secretary.

The finances of the Association are in a very satisfactory condition, as evidenced by the report of the Treasurer.

ANNUAL REPORT.

The Annual Report was issued as usual, and is a very complete account of the transactions of the Association. It will compare favorably with previous issues, and reflects credit on the Secretary. As the Association extends its sphere of usefulness, the report must necessarily grow more expensive and larger, unless much of what is now inserted should be abridged or entirely omitted, to make it less interesting is not desirable, but to lessen the expense, or to increase the revenue from suitable advertisements, should demand the careful consideration of the incoming Publishing Committee. As at present prepared nearly all the labor of preparing the report devolves on the Secretary ; and to lighten his burden somewhat I would suggest the active co-operation of all the members to procure advertisements of a suitable character. It is gratifying to be able to say that the report is largely distributed to various public libraries and schools of learning, not only in this country, but also in foreign lands.

EXCURSION.

The celebration of the Twentieth Anniversary of the organization of the Alumni Association, as recommended by my predecessor, was referred to a committee, who, after mature deliberation, recommended an excursion to Woodland Beach. Their recommendation was adopted by the Executive Committee, and on the fifteenth of July the excursion took place. About one hundred and fifty persons participated in it. The day was spent very pleasantly, and many expressed the hope that this manner of celebrating the day would be repeated. The attendance was not so large as the occasion led us to hope would be brought together. Its success, however, both socially and financially, prompts me to advise a similar celebration at each anniversary. It would gratify the social element in our nature, besides become a source of revenue to the Association.

SOCIAL MEETINGS.

The Social Meetings have been held with regularity, and were more largely attended than in previous years, not only by the students, but also by members of the Alumni and strangers, among whom were many ladies, thus proving an incentive to increased activity on the part of the Association to make these meetings still more useful in the future. Much credit is due the Committee, and especially to the active Chairman, for the success of these meetings. I would recommend to the incoming Executive Board that the Committee should be appointed early in the season, so that ample time could be had to plan for the winter's work.

MUSEUM AND LIBRARY.

At the last Annual Meeting my predecessor strongly urged the advisability of having the museum and library opened several days in the week for the use of the students and strangers, which was referred to the incoming Executive Board for action. They petitioned the Board of Trustees to grant this privilege, but the Board did not see the way clear to grant us this request. Nevertheless, I would recommend that we renew our petition to have the museum and library opened, in view of the fact that the duties of the Actuary are to be enlarged. This would remove one objection on the part of the Board, viz.: it would provide a suitable person to have charge of the museum during such hours as would prove most convenient to the students.

QUIZZES.

The Alumni Quizzes were organized as usual, at the beginning of the Fall Course, and were more largely attended than in previous years. Eighty-three attended the Senior Quiz and 29 the Junior Quiz. The Senior Quiz being so large had to be divided into two sections, thus increasing the labor of the Quiz Masters and the Secretary. But this extra labor was very willingly performed. It is gratifying to be able to state that the Junior student of the class receiving the highest general average was a member of the Alumni Quiz.

Of the members of the Senior Quiz 5 received Prize certificates, and of the whole number who attended the Senior Quiz 76 passed the final examination.

MICROSCOPY.

It is with great pleasure I can report that the Executive Committee decided to continue the Spring Course of the Class in Microscopy, to be in charge of our fellow-member Mr. A. P. Brown, who has so ably conducted the previous classes.

The growing importance the use of the microscope is assuming in pharmacy, is sufficient reason for this step.

While this branch of the Association's work has not been as successful as it deserves the Committee are much encouraged at what has been accomplished, and there is no reason to fear but that richer results will attend our labors in this department.

I would suggest that all the students attending the Microscopical Class be furnished with a certificate to that effect, signed by the officers of the Association and the Instructor.

And in order to further stimulate work with the microscope, I would recommend that an additional certificate be established, to be known as Botanical Microscopy; to be awarded to the student in the Senior Class whom Prof. Maisch decides has performed the best work with the microscope.

ANALYTICAL CHEMISTRY AND PHARMACEUTICAL MANIPULATIONS.

As at present arranged, the Course in Analytical Chemistry and Pharmaceutical Manipulations is optional with the students (though under the necessity of being examined in them). I would suggest that the Association recommend to the Board of Trustees to make these branches *compulsory*, especially that of Analytical Chemistry, as many of the students come totally unprepared to do the work in the final examination, thus giving them a less general average than they should properly have.

ORATOR.

During the year your Executive Committee has had considerable difficulty in securing an Orator for the Twenty-first Annual Reception to the Graduating Class. The Orator first elected did not decline the appointment till late in the Fall. Several others were then chosen by the Committee, but for various reasons all declined. As the time was growing very short, we had serious fears that we should be unable to procure a suitable person; finally Dr. F. E. Stewart consented to supply the vacancy. In view of the possibility of a similar difficulty in the future, I would suggest that the Association return to the former custom of electing *two* Orators—one to be styled Alternate—to act in the inability of the first named.

AMENDMENT TO CONSTITUTION.

The proposed amendment to the Constitution, changing the manner of nominations for officers, which has been proposed by our esteemed Treasurer, should receive favorable consideration. It would prevent that hasty choice of officers that has heretofore been unavoidable under the existing system.

While the Association has been unusually fortunate in the choice of officers in the past, if more time were given to this important duty even still better men might be secured to conduct the affairs of the Association.

TREASURER.

Our worthy Treasurer will soon have completed twenty-one years' connection with us as an Association, seventeen years of which time he has occupied that position. How much we are indebted to him for the success that has attended the work of this Association, you are all well aware.

Others have labored zealously and long, but none more so than he. I would, therefore, suggest that a suitable testimonial be prepared expressive of the great obligation we owe to him for his faithfulness in the good work.

DEATHS.

In common with all organizations our ranks have been thinned by the messenger of death. Up to this time, as far as known, fourteen have died during the year. The Obituary Committee will doubtless give us all the information that they could secure in reference to names, date, and cause of death.

CONCLUSION.

In conclusion, I would express the great obligation I am under to the efficient Secretary for valuable aid and assistance. Also to the members of the Executive Board for their hearty co-operation in the work of the year, and to our valued Treasurer for many suggestions tending to advance the interests of the Association.

SUGGESTIONS.

Repeat the Excursion (or Celebration of Organization).
Opening of Museum and Library.
Certificate to those attending Class in Microscopy.
Establish Certificate called Botanical Microscopy.
Recommending to make Pharmaceutical Manipulations and Analytical Chemistry compulsory.
Choose two Orators.
Testimonial to Treasurer.

Mr. David W. Ross moved that the President's address be received and filed and spread upon the minutes, and a Committee of Three be appointed to consider the suggestions contained therein. So ordered.

The President then called for the Secretary's report, which was read as follows :—

PHILADELPHIA, PA., March 20, 1885.

To the President, Officers and Members of the
Alumni Association of the Philadelphia College of Pharmacy.

GENTLEMEN :—

Another year in the history of our Association has passed, and to-day we are assembled in this room to transact the business of the Twenty-first Annual Meeting of the Association.

Your Secretary would therefore submit this his Annual Report for the transactions of the year which closes to-day.

During the year the Executive Board held five meetings, four regular and one adjourned meeting, and the attendance of the members have been as follows: Dr. Chas. A. Weidemann, Edward C. Jones, Henry Trimble and Wm. E. Krewson have attended five meetings. David W. Ross and Jos. W. England have attended four meetings. Wallace Procter and C. Carroll Meyer have attended three meetings. Jacob S. Beetem and Lucius E. Sayre have attended two meetings. Wm. R. Warner, Jr., and Thos. S. Wiegand have attended one meeting. Thos. H. Potts being absent every meeting, but sending his regrets for being absent.

During the winter the Association, as usual, has held its five social meetings, with an average attendance of 115 persons present. Your Secretary had a circular prepared for each social meeting, containing a programme of the meeting, and sent by mail to each resident member of the Association, and also distributed to each member of the Junior and Senior Class. The following gentlemen gave us lectures, or presented and read papers: Dr. Carl Seiler, Dr. Roland D. Jones, Ph. G., Dr. J. M. Anders, Prof. Edward T. Bruen, M. D., Prof. John E. Cook, Rev. Dr. R. B. Westbrook, Mr. L. F. Gordon and Mr. Lucius E. Sayre.

Discussions also took place upon the various subjects at each meeting.

Miss F. Lizzie Peirce, the Elocutionist and Principal of the Mount Vernon Institute of Elocution and Languages, was also present at every meeting, in company with the Misses Louise Lorenz, Mamie Woodward, Mabel D. Garns, Sallie A. Gesemyer, Willa Armstrong, Katie W. Shriver and Addie A. Jenkins, who entertained those present with readings and recitations.

The meetings were more successful this year than ever before, and the Committee deserve great credit, especially our worthy Chairman, Dr. A. W. Miller.

The Senior and Junior Quiz Classes were formed as usual this year. The Junior Class contained 29 students, and the Quizzes were conducted by Prof. John E. Cook, Ph. G., every Thursday afternoon. Twenty-two of the Quiz Class passed the Junior examinations successfully, in all the branches, and the gentleman who receives the Junior Testimonial from the Association for the highest general average of the Class was a member of the Quiz Class, and four other members of the Class receive honorable mention.

Eighty-three of the Senior students availed themselves of the opportunity of the Alumni Quizzes under the supervision of Messrs. L. E. Sayre and Louis Genois, Quiz Masters. Owing to the large number of applications, and to accommodate students who were unable to take the Thursday afternoon Quiz, a second class was formed which met every Wednesday afternoon. Each class had 18 meetings for Quizzes, and your Secretary kept a record of the attendance as follows:—Five attended 18 Quizzes, 19 attended 17 Quizzes, 31 attended 16 Quizzes, 9 attended 15 Quizzes, 6 attended 14 Quizzes, 6 attended 13 Quizzes, 1 attended 12 Quizzes, 2 attended 11 Quizzes, 2 attended 10 Quizzes, 1 attended 7 Quizzes and 1 attended 4 Quizzes.

Seventy-eight members of the Class came up for final examination. Three took the first modified examination, and two were not present at the examinations, one of them being sick and unable to attend.

Seventy-four of the members of the Quiz Class passed the examinations successfully, and were recommended by the Committee for the Degree of Graduate in Pharmacy, Ph. G., and were so elected by the Board of Trustees on the 18th inst., and four of the members of the Class were unsuccessful, and failed to pass the examinations. Two of the members of the Graduating Class were members of the Quiz Class of 1883–84, and are also entitled to Certificates of Membership in the Association, which will make a total of 76 new members from the Quiz Class. Fourteen of the other members of the Graduating Class have also made application and paid the necessary fee, which makes a total of 90 new members added to our number from the Graduating Class.

The Class in Microscopy numbered 11. Four were members of the Senior Class, six from the Junior Class, and one who will be a member of the next Junior Class.

Circulars have been issued for the Spring Course in Microscopy, which will commence the first week in April.

The members of the Graduating Class receiving the Alumni Prizes this year are as follows:—

Gold Medal, Henry Charles Christian Maisch, of Philadelphia, Pa.

Certificate on *Materia Medica*, William John Laval, of Evansville, Indiana.

Certificate on Pharmacy, J. Frederick Windolph, of Dover, Delaware.

Certificate on Chemistry, to James Owen Howells, of Bridgeport, Ohio.

Certificate on General Pharmacy, to Wm. Dilk Deuschle, of Chillicothe, Ohio.

Certificate on Operative Pharmacy, to Henry Brandner, Jr., of Atchison, Kansas.

Certificate on Analytical Chemistry, to Grant Elmer Kirk, of Philadelphia, Pa.

Certificate for the best and most complete Collection of Indigenous Plants, with Inflorescence, to Frederick P. Sher, of Philadelphia, Pa.

The last-named prize is given this year for the first time, although the offer has been in existence since 1878.

The Junior Testimonial is awarded this year to Walter B. Cheney, of South Manchester, Conn., he having received the highest general average of the Junior Class.

The total amount received from the Junior and Senior Quiz Classes is $966, after deducting the compensation of the three Quiz Masters, amounting to $502, netting the Association $464. There is still due from one of the members of the Senior Quiz Class a balance of $5.00.

The amount received from the Class in Microscopy was $110. Amount paid the Instructor for his services, $55; leaving a balance to the Association of $55.

Since our last Annual Meeting 22 of the former Graduates of our College have taken out Certificates and become active members of the Association, and these, added to the 90 of the present Graduating Class, makes a total increase of new members for the year of 112.

During the year death has visited our Association, and removed from our number 14 members, viz.:—

Samuel Simes, Class 1833, died March 6, 1885, at Philadelphia, Pa.
Ambrose Smith, Class 1834, died July 15, 1884, at Darlington, Md.
Joseph Trimble, Class of 1834, died July 30, 1884, at West Philadelphia.
John Goodyear, Class of 1837, died June 15, 1884, at Philadelphia, Pa.
Caleb H. Needles, Class of 1841, died October 10, 1884, at Philadelphia, Pa.
Philip L. Milleman, Class of 1866, died May 8, 1884, at Chicago, Ill.
Edward L. Jefferson, Class of 1873, died August 17, 1884, at Atlanta, Georgia.
John L. Williams, Class of 1874, died September 4, 1884, at Bloomfield, Pa.
Frank Conrath, M. D., Class of 1875, died May 15, 1884, at Milwaukee, Wis.
Jonn A. Witmer, Class of 1876, died December 29, 1884, at Las Vegas, New Mexico.
Wm. Wood Stockton, Class of 1876, died April 27, 1884, at Huron, Dakota.
C. W. Frank Moore, Class of 1877, died July 15, 1884, at Northeast, Md.
Curtis J. Bollman, Class of 1884, died November 15, 1884, at Mansfield, Ohio.
Robert F. Finck, Class of 1884, died December 10, 1884, at Philadelphia, Pa.

The Committee on Deceased Members will more fully report at this meeting.

Our roll now numbers 1,016 members, including those who graduated previous to 1850, and who are members by special resolution, and after deducting those who are known to be deceased.

The arrangements are being made by the Committee for Publishing the Twenty-first Annual Report. A number of advertisements have already been secured, and in a few days the whole material will be placed in the hands of the printers. It is the purpose of the Committee to make the Twenty-first Annual Report as complete as possible, and will again publish the list of our membership with their addresses.

In closing this, my Fifth Annual Report to the Association since I have been honored as your Secretary, I congratulate it upon its success during the past five years and trust that its future may likewise be as successful.

I desire to express my sincere thanks to the officers and members of the Executive Board, and especially to our worthy President, who is about to retire, and our time-honored Treasurer, both of whom have been untiring in their efforts, and have discharged every duty with fidelity for the best interests of this Association, and also for the courtesy and assistance they have given me during the year, and hope that all of the incoming officers may likewise work together harmoniously, and that the Association may prosper and grow in numbers and usefulness, and thus be a credit and an honor to our Alma Mater.

Respectfully submitted,

WM. E. KREWSON, *Secretary.*

Mr. Joseph W. England moved that the report of the Secretary be received and filed, and that it be spread upon the minutes and published in our Annual Report as usual. So ordered.

The Treasurer not having arrived, his report was deferred until later in the meeting.

The Secretary read the list of those who had made application for membership during the year, as follows :—

James T. Shinn,	Class	1854.
John W. Ranck, M. D.,	"	1865.
T. Elwood Conard, M. D.,	"	1871.
Thomas L. Buckman,	"	1874.
Ernest W. Herrmann,	"	1876.
Clayton R. Myers,	"	1878.
David H. Ross,	"	1878.
Theodore Sprissler,	"	1879.
Patrick M. Kelley, M.D.,	"	1879.
Oliver Henry Sterner,	"	1879.
Willis A. B. Hoke,	"	1881.
George W. Goldsmith,	"	1882.
F. W. E. Stedem,	"	1882.
Howard L. Green,	"	1882.
William B. Gleim,	"	1883.
Milton S. Falck,	"	1884.
Alfred J. Wenner,	"	1884.
Emlen Martin,	"	1884.
Henry F. Schuldt,	Class	1884.
Ephriam Z. Hoffman,	"	1884.
Samuel D. Crawford,	"	1884.
Charles Thos. Wm. Cress,	"	1884.
Samuel D. Swann,	"	1885.
Jacob Lewis Nebinger,	"	1885.
William S. Rhoads,	"	1885.
Henry C. C. Maisch,	"	1885.
John H. Stermer,	"	1885.
Charles Eugene Mayer,	"	1885.
James Edward Wright,	"	1885.
Robert Borton Matter,	"	1885.
Joseph J. Eldridge,	"	1885.
George L. Carnan,	"	1885.
J. Frederick Windolph,	"	1885.
Charles Fred. Rebsamen,	"	1885.
Theodore Feairheller,	"	1885.
Thomas Dunbar, Jr.,	"	1885.

Also, the following members of the Class of 1885 who passed the examinations of the College successfully, and are entitled to certificates and membership in the Association by virtue of their being members of the Senior Quiz Classes, viz.:

Wm. Theodore Bozenhard,
Henry Beckberger,
William Bichy,
Wayne Barker Bissell,
Henry Brandner, Jr.,
Robert Clark Cadmus,
James Sherman Cooley,
William D. Deuschle,
Fred. Horace Davis,
Blythe James Davison,
Oscar Boone Deakyne,
William Milliken Denniston,
Lewis Henry Dielman,
Morton Phelps Dickeson,
George Henry Ebeling,
Jacob Addison Eberly,
John George Engler,
Edward Henry Fienhold,
Adolf Emil Gebhard,
Peter Spang Gehris,
Rollin R. May,
Paul Ernest Meissner,
Matt. U. S. Grant Moses,
Elmer Marshall Mount,
Edward Oliver Moyer,
Edgar Herman Naudain,
John W. Newton,
Harry Louis Odenwelder,
Albert Raymond Patterson,
Leopold Peters,
Dennis Reagan,
Charles Morris Rebner,
Elias Ellsworth Riggs,
Joseph Cuttell Roberts,
Benjamin Rosenzweig,
Henry Otto Reinnoldt,
Henry Scholey Saunders,
Emil Schaible,
Carl Edward Schlegel,
Allen Curtis Schofield,

Benjamin Wallace Green,
George Adam Haffa,
James Hervey Hagenbuch,
Arthur Browne Hammond,
William Swearingen Hamilton,
William Franklin Harper,
Silas Marion Harrington,
Daniel Herr Hassler,
Henry Ernest Heinitsh,
Edwin Hutter Hess,
James Owen Howells,
James Stanton Hunter,
Gustav Frank Kuehnel,
James Almer Kyner,
Irvin Lincoln Lautenbacher,
William John Laval,
Llewellyn Hughes Lewis,
Charles Napier Lochman,
Charles Milton Mauch, Jr.,
Herman Julius Schuchard,
Abraham Lincoln Serfass,
George Mark Smith,
Harry Swain,
Henry Lippincott Stiles,
Samuel Franklin Stoll.
William Cochran Thompson,
Thomas Crowell Trefry,
Samuel Levick Van Buskirk,
William Augustus Vannort,
Frank Herman Von Achen,
Henry Wegener, Jr.,
Benjamin Franklin Weisel,
Neri Barndt Williams,
Alfred Conard Wood,
Quiz Class, 1883-84.
Frederick P. Sher,
Joseph M. Malatesta.

The Secretary moved that Mr. Wm. N. Stem be authorized to cast a unanimous ballot for the above-named applicants. Carried.

Mr. Stem then cast a favorable ballot and the President declared the above-named gentlemen duly elected as members of the Association.

The President then appointed the usual Committee, one to represent each Class present, to nominate the officers of the Association for the ensuing year as follows :—

Charles W. Hancock, Chairman,	Class	1857.
Edward C. Jones,	"	1864.
Lucius E. Sayre,	"	1866.
William E. Krewson,	"	1869.
Thomas H. Potts,	"	1871.
Wallace Procter,	"	1872.
W. Nelson Stem,	"	1873.
Henry Trimble,	"	1876.
David W. Ross,	Class	1877.
Jacob S. Beetem,	"	1878.
Roland D. Jones, M. D.,	"	1879.
William J. Pechin,	"	1880.
John H. Hahn,	"	1881.
Henry L. Green,	"	1882.
Joseph W. England,	"	1883.
Clement B. Lowe,	"	1884.
Frederick H. Davis,	"	1885.

The Committee then retired to the room below to deliberate, and the President declared a recess until the Committee should return.

In about half an hour the Committee returned, and the President again called the meeting to order.

The Secretary of the Committee, Mr. Wallace Procter, read the following list of nominees, viz. :—

For President, Jacob S. Beetem, Class 1878 ; Howard B. French, Class 1871 ; 1st Vice-President, Wallace Procter, Class 1872 ; 2d Vice-President, David W. Ross, Class 1877 ; For Treasurer, Edward C. Jones, Class 1864 ; Recording Secretary, William E. Krewson, Class 1869 ; Corresponding Secretary, Clement B. Lowe, Class 1884.

For members of the Executive Board for three years, two to be chosen :—

Charles A. Weidemann, Class 1867 ; William N. Stem, Class 1873 ; Henry Trimble, Class 1876 ; C. W. Hancock, Class 1867 ; Henry C. C. Maisch, Class 1885 ; Wm. R. Warner, Jr., Class 1881 ; Trustee of Sinking Fund, Thomas S. Wiegand, Class 1844 ; Orator for 1886. The Committee offered the following, viz. :—

Resolved, To refer this matter of electing Orator to the Executive Board for action, under the recommendation of the President in his Annual Report, unless otherwise ordered by the Association.

The Secretary moved that the report of the Committee be received, and that they be discharged with the thanks of the Association. Carried.

Mr. Henry C. C. Maisch desired to withdraw his name as a candidate.

The President put it to a vote and the meeting decided not to accept the declination.

Mr. Chas.W. Hancock desired to withdraw his name as he was unable to attend the meetings of the Executive Board on Thursday afternoons. A vote being taken his declination was accepted.

The President appointed Mr. C. C. Meyer and Jos. W. England as the Tellers to conduct the election.

The Secretary moved that where there was but one nominee for the office that Mr. Chas. W. Hancock cast a unanimous ballot for those nominated. So ordered.

After the names of the nominees had been placed upon the blackboard the Tellers proceeded to collect the ballots and retired to count the same.

The President announced that while the Tellers were counting the vote, and in order to save time the Association would proceed with other business.

The Secretary read the following bills which had been approved by the President and Secretary, viz. :—

Burk & McFetridge :—

To Printing	400 Note Circulars for Junior Students, . .	$2 50	
"	1,000 " " " Microscopy Class, .	4 00	
"	400 " " " Botanical Prize, . .	2 50	
"	300 " " " Senior Students, . .	2 50	
"	800 1-Cent Envelopes and Printing, . .	11 25	
"	100 2-Cent " "		
"	1,200 Cards, ...	3 00	
"	1,500 Programmes, ...	4 80	
"	1,000 4-Page Circulars of Annual Meeting, .	7 50	
		9 00	
			$47 05
Thomas H. McCool, for filling in 21 Membership Certificates, .			6 30
William E. Krewson, for Postage, Paper and Incidentals, . .			8 30
Secretary, for Services for the Year 1884–5, ...			100 00
Treasurer, for Sundry Expenses, "			5 42

On motion the above bills were ordered paid.

The Treasurer then submitted his report as follows :—

TREASURER'S REPORT.

Edward C. Jones, in account with the
Alumni Association, Philadelphia College of Pharmacy.

Dr.

1884, 3d mo., 17th,	To balance as per last report,	$416 59
	" Advertisements in Twentieth Annual Report,	322 00
	" Over-charge on gold medal (1884),	1 10
	" Profit from excursion, July 15, 1884,	10 50
1885, 3d mo., 20th,	" Amt. from Senior Quiz Class, 81 students, at $10.00 each,	810 00
	" Amount from one Student on account,	5 00
	" One ticket (paid full price for Quiz, 1883–4),	6 00
	" Amt. from Junior Quiz Class, 29 students, at $5.00,	145 00
	" " " Class in Microscopy, 11 students,	110 00
	" " " Sale of Slides and Covers,	4 70
	" " " " Annual Reports,	2 45
	" " " One Membership Certificate (renewed),	2 50
	" " " 36 Certificates of Membership at $5.00,	180 00
	Total,	$2,015 84

Cr.

By Cyrus R. Morgan, Reporting Annual and 4 Social Meetings,		25 00
" Burk & McFetridge, Printing Annual Report, 1884,		468 00
" " Sundry Printing for the year,		141 30
" T. H. McCool, filling in Prize Certificates, 1884,	$8 15	
" " " 100 Membership Certificates,	30 00	38 15
" J. W. Queen & Co., Acme No. 4 Microscope with Polariscope,		61 65
" William E. Krewson, Expense for Distributing Reports,		2 96
" Harry C. Ambler, Hire of Horse and Carriage, for Distributing Reports,		10 00
" H. B. Crane, Show Cards,		1 00
" William Mann, for Bottle Ink,		45
" J. B. Lippincott & Co., National Dispensary,		6 40
" Thomas S. Wiegand, Trustee of Sinking Fund, for Gold Medal, 1885,		17 00
" William E. Krewson, Postage for Annual Reports,		40 00
" " " and Incidentals,		28 87
" A. P. Brown, Services as Instructor in Microscopy,		55 00
" John E. Cook, Services as Junior Quiz Master,		87 00
" Lucius E. Sayre, Services as Senior Quiz Master,		207 50
" Louis Genois, Services as Senior Quiz Master,		207 50
" William E. Krewson, Services as Secretary for 1884–5,		100 00
" Edward C. Jones, Treasurer, Incidentals,		5 42
		$1,502 20
Balance,		512 64
		$2,015 84

Mr. Thomas H. Potts moved that the Treasurer's Report be referred to an Auditing Committee.

The President appointed Thomas H. Potts and J. W. Worthington as the Committee on Treasurer's Account.

The President appointed the following as the Committee to take into consideration the suggestions contained in the President's address .—

David W. Ross, Thomas H. Potts and C. Carroll Meyer.

The Tellers having finished the count of the vote, reported the following officers as elected for the ensuing year :—

President—Howard B. French, Class 1871.
First Vice-President—Wallace Procter, Class 1872.
Second Vice-President—David W. Ross, Class 1877.
Treasurer—Edward C. Jones, Class 1864.
Recording Secretary—William E. Krewson, Class 1869.
Corresponding Secretary—Clement B. Lowe, Class 1884.
Executive Board for three years—Dr. Charles A. Weidemann, Class 1867 ; William N. Stem, Class 1873.
Trustee of Sinking Fund—Thomas S. Wiegand, Class 1844.

On motion of the Secretary the report of the Tellers was accepted, and they were discharged.

The President then declared that the above-named gentlemen were duly elected as officers of the Association for the year 1885–86.

Mr. Thomas H. Potts moved that the Association go into nomination and election for an Orator for 1886, in accordance with the resolution of the Nominating Committee. The motion was duly seconded by the Secretary, and so ordered.

Albert E. Ebert, Class of 1864, Edward C. Jones, Class of 1864, Thomas H. Potts, Class of 1871, and William H. Gano, Class of 1884, were nominated for Orator.

Edward C. Jones and Thomas H. Potts positively declined, and the name of Mr. W. H. Gano was withdrawn.

The Secretary moved that as there was but one nominee for the position, that the Association unanimously elect Prof. Albert E. Ebert, Class 1864, of Chicago, as Orator for 1886. The motion was duly seconded, and unanimously carried.

The President then declared Prof. Albert E. Ebert, Class of 1864, as elected as Orator for 1886.

The Auditing Committee's report was now read as follows :—

"We, the Auditing Committee, appointed to audit the Treasurer's account, have performed that duty, and find it correct."

(Signed) THOMAS H. POTTS,
J. W. WORTHINGTON.

The Secretary moved that the report of the Auditing Committee be accepted and the Committee discharged, and that the Treasurer's report be spread upon the minutes and printed in our Annual Report. So ordered.

The Committee of five, appointed in accordance with the resolution adopted at the last Annual Meeting, to take into consideration the case of David R. Reed, presented their report, which was read by the Chairman, Wm. N. Stem.

The report was quite long, and was signed by all the Committee, viz. :—Wm. N. Stem, Chairman, Wm. R. Laird, Henry A. Newbold, Charles W. Warrington and H. P. Thorn.

Mr. C. B. Lowe moved that the report be accepted and that the Committee be discharged, with the thanks of the Association. Mr. T. H. Potts seconded the motion, and it was unanimously agreed to.

Mr. Thomas H. Potts moved that the report be spread in full upon the minutes, but not to be printed in our Annual Report. So ordered.

The President then read the report of the Special Committee on Botanical Prize, as follows :—

To the Alumni Association :—

Your Committee appointed to report on applications for the Botanical Prize, herewith present the result of their labors. One application was received accompanied by a set of 281 specimens distributed as follows :—

Dicotyledons, .	59 orders=	242 species.
Monocotyledons,	13 "	28 "
Cryptogamia, .	3 "	11 "
Total, . . .	75 orders=	281 species.

Of these about 75 are of acknowledged use either for medicinal purposes, or for food, and 31 are recognized by the U. S. Pharmacopœia. The specimens are well preserved and mounted and give evidence of much labor in their collection and care in their preparation. With one or two exceptions all the species represented are either indigenous to the United States, or else naturalized therein.

As the collection fulfils the requirements of the offer made by the Association, your Committee would, therefore, respectfully suggest the propriety of awarding the Prize for the Best Collection of Botanical Specimens to the applicant, Frederick P. Sher, Philadelphia.

(Signed) Charles A. Weidemann, Ph. G., M. D.,
Edward C. Jones, Ph. G.,
John E. Cook, Ph. G.,
Committee.

March 20th, 1885.

The Secretary moved that the report be accepted and spread upon the minutes. So ordered.

The Committee also submitted the following draft of the certificate, which will be awarded, and on motion of Mr. E. C. Jones it was ordered to be spread upon the minutes and printed in our Annual Report, viz.:—

ALUMNI ASSOCIATION
OF THE
PHILADELPHIA COLLEGE OF PHARMACY.

This testimonial is presented at the 21st Alumni Reception to the Graduating Class, March 20, 1885, to Frederick P. Sher for the Best Collection of Botanical specimens prepared and presented for competition in accordance with the resolution of this Association, passed February 19, 1878, to encourage and stimulate the study of Botany, as taught in the Philadelphia College of Pharmacy during the Spring and Summer months.

E. C. Jones, *Treasurer*, C. A. Weidemann, *President*,
Wm. E. Krewson, *Secretary*, Jacob S. Beetem, *First Vice-President*,
Wm. R. Warner, Jr., *Second Vice-President*.

The President now called for the report of the Committee on Deceased Members.

Mr. Clement B. Lowe, a member of the Committee, read the report.

Mr. C. Carroll Meyer moved that the report be received and filed and printed in our Annual Report. So ordered. (See Obituaries.)

Mr. C. B. Lowe spoke about the adoption of a suitable badge to be worn by members of the Alumni Association, and moved that a committee be appointed to submit designs of a badge to be worn by the members of the Alumni Association, this committee to report to the Executive Board. So ordered.

The President appointed as the committee, Clement B. Lowe, Thomas H. Potts and Joseph W. England.

The Secretary stated that he was authorized by the Chairman of the Committee on Memorial Tablet to report progress.

The Secretary stated that he had received communications from the following members of the Association, who regretted that they were unable to be present at the meeting:—

David B. Trimble, M. D., Class 1834, Forest Hermitage, near Starke, Bradford County, Fla.
Wm. Henry Schively, Class 1842, Germantown, Philadelphia, Pa.
John V. Hoffman, Class 1867, Baltimore, Md.
Emmit Kannal, Class 1871, Rensselær, Ind.
Asher C. Nagle, Class 1881, Youngstown, Ohio.
N. A. Koser, Class 1882, Oakland, Cal.
Joseph H. Brown, Class 1883, Morris, Ill.
Frederick C. Lehman, Class 1883, Bridesburg, Pa.

The Secretary stated that he was sorry that he had left the communications at home for some of them were quite interesting, especially those from the older members.

Mr. E. C. Jones moved that the communications from the older members be printed in our Annual Report. So ordered. (See letters as per Index.)

Mr. David R. Reed presented his resignation as a member of the Association.

The Secretary raised the point of order that it would be necessary for a member to return his Certificate of Membership before his resignation could be accepted.

The point being considered as well taken.

Mr. Reed withdrew his resignation for the present.

The Secretary read the following amendment to the By-Laws, which was offered at the meeting of the Executive Board, February, 1885, viz.:—

ON NOMINATIONS.

ARTICLE IV.—SECTION 1. The President shall during the month of November of each year appoint a committee of at least thirteen, of which he and the Secretary shall be members, no two of whom shall be from the same class: said committee shall report to the Executive Board at their meeting in February, and the Secretary shall send the list out in the circular notice of the annual meeting.

SEC. 2. *No* nominations will be received at the Annual Meeting unless it be by unanimous consent.

SEC. 3. Any active member of the Association can propose any candidate or list of them to the Nominating Committee, and they will be considered by the Committee and can be scheduled by them to the Executive Board and placed upon circular of Annual Meeting if the committee shall deem it desirable.

Make present Article IV Article V.

Make present Article V Article VI.

Mr. Joseph W. England then offered as a substitute to the above the following:—

ON NOMINATIONS.

ARTICLE IV.—SECTION 1. The President (or in his absence, the Chairman, *pro tem.*) shall, at the meeting of the Executive Board, in November of each year, appoint a committee of 13, not more than two (2) of whom shall be from the same class, who, together with the then acting President and Secretary, shall proceed to nominate candidates for the several offices, and report a list of the same to the Executive Board previous to their meeting in February succeeding. The said Executive Board to have said list printed on the notice of the Annual Meeting, and mailed to the members of the Alumni.

SEC. 2. Any member of the Alumni Association can suggest a candidate or a list of them to the Nominating Committee, prior to their report to the Executive Board, and ask consideration of the same.

SEC. 3. The list as presented by the Executive Board shall not be subject to amendment or further addition without the consent of a rising counted vote of two-thirds majority of those present at the Annual Meeting when, in that case, open nominations may be made, and the list amended, substituted or revised.

Make present Article IV Article V, and make present Article V Article VI.

Mr. E. C. Jones, the mover of the original amendment, accepted the substitute.

The Secretary moved the adoption of the substitute as read, which was duly seconded and carried unanimously.

The Secretary stated that Mr. Walter B. Cheney, the junior student who was entitled to receive the Junior Testimonial, was compelled to return to his home at South Manchester, Conn., immediately after the examination, but he had requested Mr. John George Engler, a senior student and member of the Graduating Class, who is a friend of his, and from the same State, to receive it for him this evening at the reception.

There being no further business, on motion of Mr. Joseph W. England, the Annual Meeting of 1885 adjourned.

Attest: WILLIAM E. KREWSON,
Secretary.

PRESIDENTS OF THE ASSOCIATION.

List of those who have acted as President of the Association since its organization:—

Wm. C. Bakes,	1864–65	Albert P. Brown,	1878–79
Thos. S. Wiegand,	1865–72	Wm. E. Krewson,	1879–80
Chas. L. Eberle,	1872–73	Hugh Campbell,	1880–81
Clemmons Parrish,	1873–74	Henry Trimble,	1881–82
Wm. McIntire,	1874–75	Thos. H. Potts,	1882–83
Adolph W. Miller, M. D.,	1875–76	Lucius E. Sayre,	1883–84
Geo. W. Kennedy,	1876–77	Chas. A. Weidemann, M.D.	1884–85
Rich'd V. Mattison, M. D.,	1877–78	Howard B. French,	1885–86

IMPORTANT NOTICE.

Any graduate of the Philadelphia College of Pharmacy is eligible for membership in the Alumni Association, and can procure blank applications from any officer of the Association, which should be properly filled up, enclosed with the required fee of $5.00, and forwarded to the Secretary, when the certificate of membership will be expressed to the applicant. The above fee is paid but once, and no yearly dues.

THE TWENTY-FIRST

ANNUAL RECEPTION

TO THE

SIXTY-FOURTH GRADUATING CLASS

BY THE

Alumni Association of Philadelphia College of Pharmacy,

WAS HELD FRIDAY EVENING, MARCH 20th, 1885.

At the College Hall, Nos. 143 and 145 North Tenth Street.

The President, Dr. Charles A. Weidemann, Ph. G., called the meeting to order at 8 o'clock, P. M., with the following remarks:—

LADIES AND GENTLEMEN:

One of the pleasant duties of the President of the Alumni Association is to bid you welcome to the Twenty-first Annual Reception of the Sixty-fourth Graduating Class of the Philadelphia College of Pharmacy. I will not make any extended remarks at this time, as there are several new features of the programme which will take some time to get through with. Many of you are familiar with the work and growth of our Association; those who are not will learn something of our work when the evening's entertainment is concluded. I think I cannot illustrate the growth of the Association better than by showing you the First Annual Report, which is a modest pamphlet of thirty-four pages, and printed in rather large type, and this, the Twentieth Annual Report, numbering one hundred and fifty-six pages, and printed in much finer type.

We feel honored by such a large attendance of the friends of the graduates, and hope you will all have a good time.

The President then directed the Secretary to call the roll of the members of the Graduating Class who had taken out certificates and joined the Alumni Association—90 in number; and, as the names of prominent members of the Class were called, the Secretary was frequently interrupted by the applause of the audience.

As the names were announced they came forward and took positions in front of the President, when he presented them with the certificates of membership, and received them into the Association with the following words:—

Gentlemen of the Graduating Class:

As President of the Alumni Association, it is my privilege and very pleasant duty to welcome you into membership in this Association. You are now recognized as active members of the Association, and, as such, let me urge you to be active in maintaining the honor of your Alma Mater, and in helping this Association and doing all you can to uphold the standard of Pharmacy in your localities, working to extend the benefits you have received from first to last through membership with this Association. The Association has claims on your confidence and support; give it the benefit of your knowledge; speak a good word for it whenever and wherever you can; think about it, and render what help you can to make this College the leading one in the country. I allude to the practical course in pharmacy and chemistry and the special course in microscopy.

In conclusion, I extend the hearty wishes of the Association for your future welfare wherever you go; remember that the Association will ever be pleased to hear from you, and hear of your prosperity, and hear of your good conduct and well doing.

After the certificates had been passed to each one of the two detachments of those whose names had been announced, they resumed their seats, and the President continued his remarks, as follows:

Since 1871 it has been the rule of the Alumni Association to present each year to the student receiving the highest general average a gold medal; this year Mr. Henry C. C. Maisch, of Philadelphia, proved to be the best man in this respect.

Mr. Henry C. C. Maisch advanced to the front of the hall, facing the President, amid the applause of his fellow-students and the audience, and the President addressed him as follows:—

Mr. Maisch:

I often think that the winner of the prize in such a contest as you have just passed through is to be sincerely pitied, owing to the very common remark, "That such men are never heard of afterwards." As if they had exhausted or expended so much of their mental powers in striving for the prize they had none left to continue their labors for the future; but we trust that the same diligence and perseverance that have characterized you in this school will continue to be shown in all your future life, so that, in the years to come, your Alma Mater may have reason to feel proud in numbering you among its graduates. It therefore gives me sincere pleasure, on behalf of the Alumni Association, to present you this valuable medal, and to express the hope you may become as famous as your honored father.

Mr. Maisch, after receiving the gold medal, replied as follows:—

Mr. President and Members of the Alumni:

Allow me to thank you for the honor that you have extended to me, and I hope your words may be fulfilled.

Mr. Maisch then returned to his seat, and the President then addressed the audience as follows:—

In continuing the order of exercises to-night, it gives me sincere pleasure to introduce to you, as the orator of the evening, Dr. Frank E. Stewart, Ph. G., of the Class of 1876, who will deliver the Annual Address.

Dr. Stewart then arose, and addressed the audience as follows:—

GENTLEMEN OF THE GRADUATING CLASS:—

It gives me great pleasure to welcome you to the Alumni of the Philadelphia College of Pharmacy—and in its name I am asked to address you. You are now about to take upon you life's responsibilities, and go forth into the world to conquer or be conquered. It is our desire to see you conquer, and as an older Graduate of this Institution, on the battle-field of life speaking to the new recruits, it is appropriate that I point out to you some of the enemies you must fight, and the way to conduct yourself to be promoted to higher positions in the professional army you are now about to enter. You have successfully passed your examinations, and now await the commencement exercises with the diploma of the College attesting to your education and training in the use of the implements of modern warfare. Your bullets are pills, and your war clubs pestles, but though they may appear so harmless there is no doubt concerning the efficacy of the weapons if properly handled.

Ladies and Gentlemen:—I have also the pleasure of welcoming you here this evening. I see by your smiling faces that you have come to witness the delight of your friends in this hour of success. I beg of you not to be alarmed when you contemplate their war-like character, for it is characteristic of the true soldier to be gallant to his friends, especially the ladies, and terrible only to his enemies.

We are taught by our *Alma Mater* that pharmacy is a liberal profession. By that it is meant that your life must have as its end a beneficent ideal. Like the true soldier, you must fight, not for the pecuniary return, but for the cause—that of suffering humanity. For this cause you must devote every energy and sacrifice even life itself, if need be. What would you think of a soldier who only appeared on dress-parade, and always ran away when he saw the enemy coming for fear of being killed?

But I don't fear that you will be cowards. The greatest danger to which you will be exposed is the temptation to forget that your life-work is a fight for the cause of humanity, and imagine it to be a battle for dollars and cents. And the worst of it is, I fear, that your constituency, the public, are also forgetting their duty in this connection, and that there is danger of the pharmaceutical profession being left in the Soudan at the mercy of the Arabs without supplies. I judge this is so because I see the pharmacists of this land just at the present time running around in a distracted manner, like Gordon's soldiers shut up in Khartoum, and the Arabs outside laughing at the confusion in the professional ranks, while the public, away off in a distant line of thought, are ignorant and careless of your peril.

I presume by this time that your curiosity is aroused, and you ask, Who is this enemy that threatens the profession of pharmacy? How shall we fight it, and what support is demanded from the public? I will tell you. The profession of pharmacy is a body of scientific men whose duty it is to seek for new truths in the fields of science, which, like the Soudan, are situated in a remote country, and improve the health of the community by using these truths for that end. The pharmacist is the servant of the public, who demand that he shall not only serve the community with pure drugs and medicines, but protect it from all fraud, error and imposition. The community buy the drugs and medicines as mere articles of merchandise, but they do not pay for the amount of original research in botany, chemistry and other branches of the sciences of drugs necessary for you to become expert scientific men and authorities on everything you dispense over the counter. The result is, that the pharmacist is no longer an authority concerning the stock he sells, but occupies the position of a merchant, and sells what is called for, good or bad, without any relation to his position as a professed servant of the public, and a judge for them between what is safe to employ and what is harmful. Now, as the laws are constituted in this country, any person, whether learned in medicine or an ignorant laborer on the railroad, fresh from the bogs of good old Ireland, can mix together a few drugs—poisons if he so desires—and put the compound on the market as a sovereign remedy for all the ills that flesh is heir to. Compounds of this nature the pharmacist is asked to dispense and recommend, and has been bribed to do so for the small amount of profit there is in them, and so skillfully has the demand been created for them by the manufacturer that the sale has become perfectly enormous, and the public are dosing themselves to an alarming degree with secret nostrums of every description, to the serious impairment of the general health of the community that you, as public soldiers, have sworn to defend.

We have, then, the analogy complete. Scientific medicine is the Soudan. The pharmaceutical profession are sent to conquer it. The nostrum business represents the Arab, and the public must keep the pharmaceutical army supplied with rations and ammunition, or it will either be starved to death or cut off by the enemy.

But this analogy may be carried still further. Just at the present time the nostrum Madhi has shut up the pharmaceutical profession in Khartoum, from which it is vainly trying to escape, and unless the public come with a rescuing army all hope of escape is lost.

Competition between a liberal profession which must demonstrate its position by the establishment of scientific facts, and publish all its discoveries for the benefit of the profession, so that knowledge may become speedily disseminated and used to relieve human suffering, and a trade which locks up knowledge to secrecy, and creates a demand by humbugging the public with skillful pretence, is a very unfair one, for human nature is so constituted that quackery always succeeds the best.

Professional pharmacy, therefore, has been hemmed in, and exists in a state of siege, and the public refuse the relief so necessary to its salvation.

But the city of Khartoum fell at last, not from an outside enemy, but an inside foe, and here is where the danger lies in regard to pharmacy at the present time. An enemy has arisen in our midst pretending to be advanced pharmacy, but in reality the nostrum business in disguise. So skillfully has it insinuated itself in the professional life, and so close is its imitation of the methods of science, that it has deceived even many of the leaders of our professional army, by whom it is received as a friend. It has wound its threads around pharmacy as a spider spins his silken bands around the victim, and each little filament is so soft and delicate that no one realizes the strength of the meshes until he attempts to escape from the toils. Medical college and profession, medical press and pharmaceutical press, and the secular and religious papers as well, have been drawn into its clutches, and pharmacy stands with but a few defenders left to point out the danger. Let me illustrate.

I hold in my hand an advertisement of the "*Nineteenth Century Therapeutical Company*," clipped from the *Bamboozle Medical Journal*, published at *Bamboozledom* as an organ of the Graduate-them-quick Medical College. It reads as follows :—

"Pasteurine." The greatest medical discovery of the age. Good for man. Better for beast.

"Taking up the subject of investigation pursued by the great Pasteur at the place where that savant left off, we have conducted the investigation further towards a practical result in the treatment of disease rather than towards the establishment of any theories as to the cause thereof.

"Taking into consideration in the outstart that all diseases are more or less due to the effect or presence of micro-organisms, our objective point has been to invent a compound which will effectually destroy those morbid and deathly agents. Years of careful study on our part, and the exhaustion of all published literature upon the subject, have led us, as usual, to a successful issue. We now offer "Pasteurine" as one of the greatest discoveries of the age. The formulæ of this compound, or as much of it as the physician needs to know, in accordance with our usual rule in this respect, is afforded as follows :—

"Nitrogen, one volume; carbonic acid gas, pure, anhydrated, two volumes; permanganate of potash, two parts by weight; pure oxygen, without admixture, one volume; pure carbon in crystalline form, one part by weight. These ingredients should be carefully mixed in an air-tight receptacle of *pure platinum* of a capacity of five gallons. The mixture should be gently boiled, and the resulting product, a liquid of extreme density and oily consistency, is dissolved in a strong solution of nitro-muriatic acid, the proportion being one part of the liquid by weight to two parts of the acid. With this result is then admixed the active principles of eucalytus globulus, carbolic acid, nitrate of silver, dissolved in a menstruum of highly-concentrated sulphuric ether, in the proportion of one part of each ingredient to five parts of ether. The whole compound is then mixed in a platinum vessel and allowed to precipitate, when the clear liquid is decanted for sale. For further particulars, send for circulars.

"Please note this is not a *secret* medicine, and a trade-mark has been secured to maintain *uniformity of character*, and to protect a valuable property against imitation.

"To those who have tried to prepare Pasteurine by the above formulæ and have failed in so doing, we beg to state that the way it is done is our trade secret, and none of their business.

"As we own exclusive property in the word "Pasteurine," and have invested a great deal of capital in making it a valuable asset by advertising, it is apparent that all other preparations claiming to be the same thing are fraudulent imitations. If any one says there is an incompatibility in our formulæ, or criticises our statement concerning the size of our platinum vessel, it goes to prove that they are animated by trade jealousy, and no attention should be paid to their scandalous attacks."

This is a caricature to be sure, but a very fair representative in principle to the original. You will notice that this "advanced" pharmaceutical system claims proprietaryship and monopoly, yet pretends to be professional and scientific. You will recognize the pretence in that it gives formulæ that are impracticable, incompatible, and often ridiculous, and claims the same as wonderful discoveries in science, and advertises to cure in advance of all proof whether its alleged discoveries have any curative virtue whatever—in other words, a little study will show you that it is a system of fraud and humbug of the "first water."

But the connection of this proprietary pharmaceutical business with the outside nostrum business has not been recognized until lately. The fact is proven that it is in collusion and daily communication with the enemy, and is now plotting to deliver the city into its hands.

Having the whole press of the country so completely under its control, it hopes to accomplish this object silently; and once accomplished, pharmacy will be blotted out of the land forever, and years must elapse before the public can ever become aware that it has disappeared.

The reason why it has not been recognized in its disguise is on account of a very clever stroke of policy on the part of the trade in calling the outside enemy the patent medicine business, and appealing to the people to support the patent laws of the country against the wicked designs and foolish whims of the scientific world, who want to establish a system of communism in its place, and calling the other "Advanced Pharmacy," "Elegant Pharmaceutical Specialties," "Medical Specialties," and the like. Now, the fact is that medicines are rarely patented. The patent law demands a publication of the exact nature of any and every invention for the benefit of the public, and only grants to the inventor the exclusive use of his invention for a certain number of years. So a scheme was devised for protection whereby the privileges of the patent law could be gained without complying with its beneficient and scientific requirements. This is known as the trade mark system. It consists in registering the only name by which these alleged discoveries are known to the public as trade marks at the Patent Office in Washington, and keeping the formulæ of the articles so protected trade secrets. But this is the system long ago adopted by the so-called "patent" medicine business. Now, the fact that the nostrum business and the proprietary pharmaceutical business both exist under the trade-mark system, and are precisely the same in their legal status, and that they have adopted the same means of creating a demand for their wares by pretence, error, humbug and lies, in itself should be sufficient to open the eyes of the friends of professional pharmacy. But if it is not, I call your attention to the fact that this business is rapidly drifting into the hands of ignorant tradesmen, uneducated either in pharmacy or the application of medicine to the cure of sick—the same class, in fact, who represent the nostrum trade outside the camp.

But the worst foe we have to dread, however, is the educated pharmacist who has turned traitor to the cause, sold out to the enemy, and gone into the proprietary business himself, for he is an enemy within the camp, though claiming to be friendly. I say this advisedly, for that form of the nostrum business against which I am speaking originated in the pharmaceutical camp, and that, too, among some of the so-called leaders of pharmacy, as a study of the history of its rise and progress will show.

The first proprietary pharmaceuticals were the medical specialties and elixirs devised for sale to the public, and recommended for that purpose by the retail druggists. Some of them were the formulæ of well-known medical men of the time, and others the device of the apothecary. The medical ingredients and quantities thereof contained in each bottle of these preparations, together with full instructions for use, was printed on the labels. But the composition of the vehicle in which the medicinal activities was dissolved remained in every instance the trade secret of each particular druggist. This, then, is the history of the origin of the medical specialty. You ask what fault do I find with them. I will tell you. First, withholding the formulæ for trade purposes was unprofessional. If pharmacy is a liberal profession, it is manifest that every formula should have been published for the benefit of the science of pharmacy and the profession at large. Second, claiming proprietaryship in formulæ and censuring others for using them, as was often done, certainly can only be condemned, for discoveries in pharmaceutical science are the common property of the profession. Third, recommending preparations of this class to the public is an usurpation of the physician's prerogative to prescribe for the sick by druggists who are ignorant alike concerning the nature of disease or its treatment.

As long as this abuse was limited to the retail drug store it was unnoticed. But certain druggists, with more business enterprise or less professional character than their neighbors, commenced to advertise their claims to greater skill in the preparation of these articles by means of circulars distributed to the medical profession. Advertising, well conducted, always pays; and it was not long before we had calls for Brown's peculiar make of Bitter Wine of Iron, and Jones's Wine of Beef and Iron, the only difference between each brand being in the composition and flavoring of the vehicles in which the medicinal ingredients were dissolved, which formulæ were claimed as secret and proprietary by those who prepared them. Business was brisk and the demand rapidly increased, until larger laboratories were finally opened for their manufacture. In this way originated the great manufacturing houses. Now, as the demand increased for special brands of well-known articles, the less enterprising druggists became jealous of their more fortunate competitors, and commenced to grumble because their trade was leaving them. This grumbling is known to the public as the feeling existing between the pharmacists and the manufacturers.

As time went on the proprietary pharmacy system commenced to assume a more definite shape. Competition between the manufacturing houses developed a new phase of the subject. New compounds of old and well-known drugs were found by the manufacturing houses to possess marvelous virtues before unheard of in the cure of disease. These compounds were given fanciful names by their alleged discoverers, and all the energies of the advertising departments turned to creating a demand for them. That these discoveries were made by men knowing nothing whatever about disease or its treatment did not seem at all incongruous to the rank and file of the medical profession, to whom the advertisements were chiefly directed, and they were eagerly seized upon as possible weapons to successfully combat disease by the young physicians just turned loose from our medical colleges without the least practical training in the treatment of the sick. Neither was it taken into account by them that an ordinary prescription, containing like ingredients, from their own pen, and compounded by the local druggist, would do as well. To prevent the retail druggist from competing with them, the manufacturers now devised a scheme for their own protection by registering the names of these compounds as trade-marks in the Patent Office at Washington, as I have already told you. In this way came into existence the "Trade-mark Pharmaceuticals," now so well known in this country and in England.

At last a foothold was gained for them in the great cities in the following way: Medical ethics forbids the physician to advertise. The specialist derives his practice in great degree from the general practitioner, who refers cases to him for treatment when ordinary means fail to reach the case. It is very desirable, therefore, that the specialist should be known to the general practitioner, and the trade-mark pharmaceuticals offered them a method of obtaining the desired notoriety without directly breaking the code of ethics. Testimonials were freely given to the manufacturers for insertion in the advertising columns of the medical press, recommending the general practitioner to use these articles, and advertising their specialty at the same time.

The press, specialists and manufacturers all made money by this operation, hence all three favored the scheme, and pharmacy became more and more degenerated in consequence.

But it makes a good deal of difference whose ox is gored. The manufacturers, desiring a larger field, now turned to the public with their advertisements, and inserted them in the secular and religious press, and by so doing perpetrated a grim joke on the physicians who had been sustaining them by their certificates; for a demand was at once created with the people for these curious compounds with fanciful names, under the sanction of the physicians who had recommended them, and who now commenced to suffer severely in competition with the manufacturers for public favor. Instead of striking at the root of the evil, however, the injured medical profession now commenced to grumble against the drug trade generally. This grumbling is known to the public as the feeling between the doctors and the druggists.

This, then, is the history of the development and growth of the proprietary pharmaceutical scheme. It has become widespread, and embraces nearly every retail drug store in the land in its grasp. Now, gentlemen, you may decide to join the majority and go into this business, but, if you do so, do not complain if the scientific world class you as tradesmen, and not members of a liberal profession. You may, by skilful advertising, make money by it, and fool a deluded public, and a worse deluded medical profession, but you can never rise to professional eminence while following such a business, I assure you.

But contrast this trade ideal of pharmacy with the beneficent ideal of a liberal profession, and see which is better to choose. By studying the principle and life work of one who has achieved professional eminence and imitating his example, you can not only gain that inspiration that will enable you to go forward as brave soldiers and battle for the cause of scientific pharmacy, but learn how to do it as well. You are to gain your livelihood by dispensing medicine to the afflicted as the physician obtains his living by prescribing them. Both, to this extent, work for pay. The soldier, too, works for pay; but is the money he gains a recompense for the awful privations of a weary campaign in Egypt? or the loss of health, and even life itself, incident thereto? No; the pay is but a means to the end, and that end his country's cause for which he fights. So, too, the physician and pharmacist. Money, of necessity, must be a secondary end to the cause of suffering humanity, for no money can pay him for the sacrifices he must make to be true to his trust. Let us call to your attention, therefore, the interesting and useful life-work of one of the greatest of modern scientists and professional men—the immortal Pasteur.

Louis Pasteur was born in the city of Arbois, in the department of the Jura. When of suitable age, his parents sent him to the communal school, and he was so proud of the fact that he went on the first day laden with books beyond his years. But with Pasteur, as with many boys, play had more attraction than work, and he did not turn out a diligent student, in spite of this promise of precocity. It is related that he was as apt to play truant and go fishing or hunting as to school. This is a comfort to us who have a sad recollection of our own want of rectitude in school-boy days.

But there was something about the boy that caused the Principal to predict that the time would come when Pasteur would occupy a professorship in some royal institution, and, as we shall see, his after career fully justified the prophecy.

Being desirous of studying philosophy, as there was no chair devoted to that subject at Arbois, Pasteur went to Besancon. Here he became very much interested in chemistry, in which department he soon excelled. Professor Daly was so much disconcerted at his searching questions, that he finally told him that it was the business of the master to question the pupil, and not that of the pupil to question the master. But, fortunately for Pasteur, there was a pharmacist in town who had made some reputation in science, and of him our hero took a private quiz in chemistry. At the Ecole Normal, however, he had Balard for a teacher, and was also under the instruction of Dumas.

Thoroughly equipped for his life-work by careful training, Pasteur now started out on his career of usefulness. His first investigations in the scientific field were to ascertain the reason of the difference of behavior to polarized light of the crystals of paratartrate of soda and ammonia and tartrate of soda and ammonia—bodies identical in composition and external form and other properties. This led to the discovery of a difference in the form of the crystals and the molecular structure of the two bodies which had hitherto escaped detection, and from this he drew some valuable conclusions relating to symmetry and dys-symmetry in the molecular arrangement of bodies.

Pasteur's wedding-day came on while he was pursuing these investigations, and he went, not to the marriage-feast, but to his laboratory, and had to be sent for when all was ready.

Quickened in his powers of observation by his investigation, Pasteur now commenced the great work on fermentation with which his life is identified. Liebig's theory that fermentation is due to the action of the oxygen of the air on nitrogenous substances was then in vogue. After very extensive experiments, Pasteur demonstrated the cause of fermentation not to be due to the action of oxygen, as was supposed, but the result of the growth of the yeast-plant. He also discovered that the process went on faster when oxygen was excluded than when it was admitted to the fermenting infusions by allowing the air to come in contact with them. Further examination enabled him to demonstrate that fermentation in milk is due to similar micro-organisms, and that the butyric fermentation is the result of a like cause. Liebig's views were thus overturned, and a new era in the science of fermentation inaugurated.

But Pasteur's discovery was not left to go unchallenged. After he had been collecting his proofs for twenty years, Dr. Bouillard asked him very sharply in the Academy one day, "How are your microscopic organisms disposed of? What are the ferments of the ferments?" Both Bouillard and Liebig believed that this question could not be answered. Pasteur was equal to the emergency, however, and proved, by a very interesting experiment, that oxygen, deprived of all germs, is incapable of producing fermentation or putrefaction, even after years, but action is at once set up if the germs are present. He then answered the question by demonstrating that the ferments are destroyed by a new series of organisms living in the air, and these by another series in succession, until the ultimate products are oxidized.

The next important question that Pasteur was destined to settle was one that had interested mankind for centuries—Does life originate spontaneously? The advocates of spontaneous generation were led at that time by M. Pouchet. He had thrown down the gauntlet by saying, "The adversaries of spontaneous generation assume that the germs of microscopic beings exist in the air, and are carried by it to a considerable distance. Well! What will they say if I succeed in producing a generation of organized beings after an artificial air has been substituted for that of the atmosphere?"

The experiment was tried. All the vessels were carefully prepared, to exclude all possible source of germs, and in eight days after a mould appeared in the infusion, which had been put boiling hot into the boiling-hot medium. "Where did the mould come from if it was not spontaneously developed?" asked M. Pouchet triumphantly.

Pasteur took up the gauntlet in the presence of an enthusiastic audience, for Paris had become greatly excited in the matter. "Yes," said he, "the experiment has been performed in an irreproachable manner as to all the points that have attracted the attention of the author; but I will show that there is one cause of error that M. Pouchet has not perceived, that he has not thought of, and no one else has thought of, which makes his experiment wholly illusory. He used mercury in his tube, without purifying it, and I will show that that was capable of collecting dust from the air and introducing it to his apparatus." A beam of light was let into the darkened room, which showed the air to be full of dust, and ever since the mercury had come from the mine it had been exposed to atmospheric dust full of germs. Similar experiments to those of M. Pouchet with pure mercury were now initiated, and no life appeared.

Many experiments and counter-experiments were tried by M. Pouchet and his friends, on one side, and Pasteur on the other, resulting in final overthrow to the doctrine of spontaneous generation, and establishing Pasteur's reputation as a careful observer of natural phenomena.

A terrible calamity was threatening France. A disease had appeared among the silk worms, killing them by the thousands and rapidly destroying the great silk industry of that nation. The thoroughly alarmed government appointed a commission to make special investigation, and Pasteur was asked to direct it personally. At first he refused, because it would withdraw him from the study of the ferments, but finally accepted the task, and commenced the line of investigation which has resulted in so much good to one of the great industries of France. Certain micro-organisms were found to be the cause of the disease. He found the means of preventing the disorders, and restored prosperity to the desolate silk district. But the cost of this precious result was a partial paralysis from which he never fully recovered.

But a still greater triumph was in store for Pasteur. Malignant carbuncle was creating havoc among the cattle in France. After extensive research into the cause of this disease, he succeeded in isolating a micro-organism from the blood of cattle affected with carbuncle, cultivated it in its pure state, and studied its action on animals. He found that he could transplant this microbe to an artificially-prepared medium and cultivate it there; that, by successive transplantings, its potency became much weaker; and that, finally, a virus was produced that would make sick, but not kill. With this attenuated virus he inoculated cows, and, after they recovered from the effects, with virus of full strength, without effecting them in the least. They survived the ordeal. A preventive of this terrible disease had been found.

A public test experiment was now made. Twenty-four sheep, a goat and six cows were vaccinated, while twenty-five sheep and four cows were held in reserve, unvaccinated, for further experiment. After time had been given for the vaccination to produce its effects, all the animals, sixty in number, were inoculated with undiluted virus. Forty-eight hours afterwards, more than two hundred persons met in the pasture to witness the effect. Twenty-one of the unvaccinated sheep and the goat were dead, and two more of the sheep were dying, while the last one died the same evening. The unvaccinated cows were sufferely severely from fever and œdema.

The vaccinated sheep were all well and lively, and the vaccinated cows had neither tumor nor fever of any kind, and were feeding quietly. Vaccination is now employed regularly in French pastures; 500,000 cases of its application had been registered at the end of 1883, and the mortality from carbuncle had been reduced ten times.

In 1874 Lister wrote Pasteur that he owed to him the idea of the antisceptic treatment of wounds. In 1876 Tyndall wrote to him the following significant words: "For the first time in the history of science we have a right to entertain the sure and certain hope that, as to epidemic diseases, medicine will shortly be delivered from empiricism, and placed upon a really scientific basis. When that great day shall come, mankind will, in my opinion, recognize that it is to you that the greatest part of its gratitude is due." Hence not only is that wonderful stride in surgery known as "Listerism" due indirectly to the investigations of Pasteur, but therapeutics has received an impetus already resulting in a revolution of our ideas of many of the epidemic diseases and their method of treatment. What lasting benefit to humanity has been the life work of that great and unselfish man, Louis Pasteur! Can such a debt be paid in money?

The life of Pasteur, and his work, shines out in strong contrast to that imitation of it under the name of "Pasteurine" that I have employed to illustrate the proprietary pharmaceutical humbug. But you can readily understand that the latter is a money-making scheme, and that the former is not. You will also see that Pasteur's work is of the greatest practical value to the French nation; while the imitation of it ought to be put down in any country by the strong arm of the law.

You will admit with me that such a man as Pasteur ought to be supported by the nation, so that he can continue his valuable work undisturbed by the petty annoyance of gaining his bread. Under the same principle, you will admit that it is not only a wise policy, but a duty, on the part of the public to protect the liberal professions from quackery and elevate them to positions where it will be an inducement for the best talent of the land to enter them.

Now, I claim that it is impossible for pharmacy to be a liberal profession in this country under existing laws. As long as the public permit anybody to dispense medicines and to drug the community by the wholesale with secret nostrums, many of them of poisonous nature, forcing the pharmacists to keep them in stock or starve to death for want of patronage; and as long as the medical profession endorse this evil, by prescribing pharmaceutical nostrums, just so long must the pharmacist, by necessity, be a merchant in goods concerning which he knows nothing whatever. Other countries have had to face this problem, and have met it successfully. Such a system of humbuggery as I have described cannot exist under the laws of France and Germany. Take the laws of France, for example.

There are no patent medicines in France. "Medicinal Preparations" is what they call them over there, and not every one is allowed to compound and dispense them. In fact, there are only two classes—regular physicians and first-class pharmacists—that can do so. To become a first-class pharmacist in France one is required to conduct his studies in a College of Pharmacy for one year, and must have practical experience in a pharmacy where physicians' prescriptions are compounded. He then receives a preliminary license. Three years more study at a College of Pharmacy, and a very stringent examination, are necessary before the final license is granted. One year more study would entitle him to the medical degree and a license to practice medicine.

Now, when a physician or first-class pharmacist want to introduce a "medicinal preparation," he goes before the Academy of Medicine and informs these gentlemen with regard to the nature of the article and his experience in the use of it. Unless he be a practitioner of some note, he is very apt to be received with a "cold shoulder" by the Academy and his application refused at once; but if it is entertained, a copy of his formula is asked for, which is handed over, with a sample of the preparation, to the analyst. If the article falls short of the standard established by the formula, that ends the matter at once. This ordeal passed, the Academy of Medicine places the remedy in a hospital where the disease for which it is recommended is treated, and then it is submitted to careful tests for several weeks in numerous cases. If it prove efficacious, it is then published in *L'Officine* and also in the *Codex Medicus*, and the compounder is allowed to manufacture and sell it. The formula once published, any one has an equal right to manufacture and sell the article on equal terms with the introducer. The only protection he receives is that afforded by his name and label; and, the formula being non-secret, and the manufacture and sale of the article being open to legitimate competition, physicians regard it as perfectly professional to prescribe it. There is a certain *esprit de corps* about the matter, however, so that the physicians usually specify the preparations of the original compounder, thus affording him, indirectly, additional protection. And if anyone else wishes to market a similar article under his own name, his preparation of it must be passed through the same ordeal as the original by the Academy. The standard of these medicines is maintained by a system of government inspection, and if goods taken at random and at any time by the inspector are not found to correspond with the published formula, the proprietor is either fined or deprived of his privilege of putting up the prescription. So rigid is the enforcement of the law, that the inspector cannot be purchased by a crisp bank-bill, as is too often the case in the United States, where systems of inspection are in use.

"Proprietary" medicines from other countries are submitted to like supervision as those manufactured in France, and the larger bulk, especially from this country, are excluded entirely. Crude drugs are, likewise, under governmental supervision in France, and are examined very carefully by experts skilled in this work, and are classified according to their merits, while the adulterated ones are excluded.

And shall the United States fall behind other countries in civilization? It should be the first thought, then, in the work of every lover of scientific pharmacy to obtain the aid of the Government, representing as it does the public at large, in elevating pharmacy to its true dignity as a liberal profession.

Finally, therefore, fellow-members of our esteemed Alumni, I bid you God speed, and I leave with you this parting injunction. Take it with you, ponder it, and live compatible with it if you wish to attain professional eminence in your calling. The best blood of the land may flow in your veins, you may inherit riches and honor, but this will avail you nothing as professional men except as a means to the end. Devote yourselves to original research in the fields of science, and seek to be known and honored by your fellow-men as discoverers of new truths. As has been truly said, Such a life is noble in its object, and universal in its beneficence. And when your life on earth is over you will leave behind you a name that shall live in the memory of man when the titles of kings shall be forgotten.

In the words of Prof. H. R. Johnson, "The man of science is willing to rest on the basis of his own labors alone for his credit with mankind and his fame with future generations. In the view of such a man, the accidents of birth, of fortune, of local habitation, and conventional rank in the artificial organization of society, all sink into insignificance by the side of a single truth of nature. If he have contributed his mite to the increase of knowledge; if he have diffused that knowledge for the benefit of mankind; and, above all, if he have applied it to the useful, or even to the ornamental, purposes of life, he has laid, not his family, not his country, but the world of mankind under lasting obligations." Therefore, my fellow-alumni, remember your obligations as professional men, and fulfil them faithfully. And, gentlemen and ladies, do not forget to bestow your earnest sympathy and support on our attempt to elevate pharmacy to the dignity of a liberal profession.

After Dr. Stewart had concluded his oration, which was listened to with marked attention by the audience, the President announced that it has been the custom of the Association for some years past to present to the one receiving the highest average of each special branch a certificate, and at this point we will present these certificates.

The member of the Graduating Class receiving the highest average in Materia Medica this year is Mr. Wm. J. Laval, of Evansville, Ind., and invited him to come forward and receive it.

Mr. Laval came forward, and Dr. A. W. Miller, Ph. G., presented him with the certificate, with the following remarks:—

WM. J. LAVAL:—It affords me a great deal of pleasure to present a certificate to one having passed the highest average in the department of Materia Medica. I think, sir, you, as well as your classmates, will agree with me in considering this not by any means as an empty honor, or one that has been cheaply obtained; on the contrary, you well know it has been dearly bought and dearly purchased by you by long and arduous labor, and I trust when you return to visit your home in a far-off Western State you will often remember it, and that it will impress on the unsuspecting citizen a sense of the full dignity of the Philadelphia College of Pharmacy and the Alumni Association, who have issued it and who forward it to you. I think by doing so you will the sooner elevate yourself in the eyes of your fellow-citizens, but you may benefit us indirectly by stimulating other young men to come here and subject themselves to the same ordeal. I will also repeat the sentiment presented by Mr. Maisch, and I would not have you to be content merely with the possession of this certificate. I would urge upon you the continuing of your studies, particularly in the line of original research. I trust, sir, on future occasions, when we have our Alumni meetings monthly down-stairs, we shall be favored with your presence occasionally, or a communication from you, which will then be read to those who will succeed you. Allow me to impress upon you that you have the good wishes of the Alumni.

Mr. Laval replied as follows:—

I am very thankful to you for the certificate which you have just presented to me, and shall always consider it, sir, a high honor in receiving it.

The President stated that the Certificate of Proficiency in Pharmacy would now be presented to J. Frederick Windolph, of Dover, Del., by Wallace Procter, Ph. G.

Mr. Windolph came forward, and Mr. Procter addressed him as follows :—

Just forty years ago the chair of Pharmacy in this College was established. The branch in which you have already evinced your proficiency, and for which we now give you a certificate. Previous to that time the branches taught were those of Materia Medica and Chemistry, without recognizing our especial branch of the store, which Pharmacy is supposed to represent in this College.

You have evinced your familiarity with that branch of our profession which is taught in this College. Your practical experience has been gained in the store and laboratory, and at this time, to show your merits in attaining the highest average in this branch, we present you this certificate. You will please receive it at the hands of our Association.

Mr. Windolph responded as follows :—

I thank you, sir, for your kind words and good wishes. I wish to extend my thanks to the Alumni Association, and to express my appreciation for this honor that it has pleased them to confer upon me.

The President then invited James Owen Howells, of Bridgeport, Ohio, to come forward, he having received the highest general average in Chemistry, and requested Mr. C. Carroll Meyer, Ph. G., to present the certificate to him, which he did, with the following remarks :—

Mr. James Owen Howells :—It is ever pleasant to speak words of commendation to one who has attained high proficiency, and it is my duty to do so to-night. To those who understand the difficulty of the study of Chemistry, and to those who understand the ability of the gentleman who wrestled eagerly for this prize, it is manifest that you certainly deserve the hearty congratulations of the Alumni Association of the Philadelphia College of Pharmacy. Therefore, on behalf of the Alumni Association, I extend their hearty congratulations, and I sincerely trust, as we all do, that you will not let your efforts lapse, but that you will continue through life to be an honor to your Alma Mater, and that this will be a stimulus, through life, for you.

Mr. Howells bowed his acknowledgments for the certificate and resumed his seat.

The President now stated that the next certificate to be presented is that on Operative Pharmacy, which had been won by Mr. Henry Brandner, Jr., of Atchison, Kansas, and requested Mr. Brandner to advance to the front of the desk, which he did, and Mr. Wm. N. Stem, Ph. G., addressed him with the following remarks :—

Mr. Brandner :—This certificate is presented to you because you have excelled in pharmaceutical manipulation ; or, in other words, because you have surpassed your classmates in an examination which was intended to show your skill and knowledge of practical pharmacy; no one of your professional accomplishments is more important than this one, for it is the distinctive characteristic of competent pharmacists. To be able to do well the practical work, pharmacy implies a correct understanding of the scientific principles upon which it is based. All the instruction you have received from learned professors in this college, all your work and worry, and the midnight oil you have consumed, have been efforts towards the attainment of this accomplishment. You have won this prize by honest industry and application, and to possess these traits is to have within you the elements of future success.

Accept it with the congratulations and best wishes of the Alumni Association.

Mr. Brandner replied as follows:—

In accepting this certificate, I hereby extend my hearty thanks to you for your kind appreciation of my efforts.

The President now invited Dr. Roland D. Jones, Ph. G., to present the Certificate on General Pharmacy to Wm. D. Deuschle, of Chillicothe, Ohio, he having been deemed worthy of this prize by the Committee on Examination.

Mr. Deuschle came forward, and Dr. Jones addressed him as follows:—

MR. DEUSCHLE:—It gives me great pleasure to present you this certificate to-night. It is a recognition of the wonderful skill you have displayed in pharmaceutical manipulation, as well as a reward from the Committee of this College for the satisfactory examination you have passed. We therefore give you this prize as a reward for your labor.

Mr. Deuschle replied as follows:—

GENTLEMEN OF THE ALUMNI ASSOCIATION:—I accept this token of your appreciation with many thanks.

The President now announced that the next certificate to be presented was that for the best examination in Analytical Chemistry, which would be awarded to Grant Elmer Kirk, of Philadelphia, and invited Mr. Kirk to come forward, when Mr. Jacob S. Beetem, Ph. G., would present the certificate.

Mr. Beetem then addressed Mr. Kirk as follows:—

In this branch of Analytical Chemistry you have many illustrious predecessors around you, and we trust that you will give to science many new and wonderful substances by means of the knowledge you have acquired at this College, and if you, by the aid of modern apparatus, eliminate and add but one new substance in chemical knowledge, you may well feel proud. We trust this certificate of your proficiency will prove an incentive; accept it, then, with the kindest wishes of the members of the Alumni Association.

Mr. Kirk replied as follows:—

MR. PRESIDENT AND GENTLEMEN:—I thank you for this certificate. All I can say, in answer to the kind remarks, is, that I shall try to perpetuate the name of this College and of her Alumni Association.

The President now announced that the next article on the programme was the Annual Class Oration, and introduced Mr. Charles Clifton Ramey, of Norristown, Pa., and a member of the Graduating Class.

Mr. Ramey advanced behind the desk and delivered the following oration from memory, which was highly appreciated:—

THE ELEMENTS OF SUCCESS.

The human spirit is ever striving for something higher and better than itself. Actuated by a noble ambition, man seeks to attain honor and distinction among his associates. The ancient Greeks wisely embodied the spirit of emulation in the word "anthropos," man, the upward-looking or striving one. In every walk of life, however humble it may be, there are requisites, precedent conditions, without which fame is but a delusion, a vague, undefined nothing, a mental phantom whose pursuit is madness and folly. The smiles of fortune, the flattery of friends, a happy combination of circumstances, and the empty honors of promotion, are often mistaken for evidences of genuine merit and deserved success. It is true that genii, like poets, are born, not made, yet they are born intellectual infants with unlimited possibilities of thought, not mental giants with well-developed faculties. The mind of man, not unlike nature herself, is an organism whose functions attain strength only by a process of evolution. The gradual unfolding of our mental powers marks different stages of activity, all of which may be assisted by close private application. It is not so much what the mind does for man, as what man does for the mind. The brightest intellect, hemmed in by a spirit of indolence, will never shed much glory or lustre on the world about it, whereas the feeblest understanding, imbued with an untiring energy in the acquisition of knowledge, may become so enriched as to be a mine of intellectual wealth in itself.

The departments of science, literature, and art abound with honored names placed high on the roll of fame, not so much on account of intuitive excellency, as of what they have achieved by patient, weary, and consecrated labor. There is, then, a marked distinction between *commanding* success and *deserving* it. As Shakspeare says: "Some men are *born* to greatness, some *achieve* greatness, and some have greatness *thrust upon them.*" The world owes nothing to the first class, and is seldom benefited by the third. It is the men whose sense of duty and honor, subject neither to eclipse nor wane, impels them to deeds of renown; it is those men who prove the world's benefactors, and own and appreciate in all its bearings the magic word success.

Whatever may be the incentive, there can be no true success without the essential trinity of *emulation*, *perseverance*, and *integrity of purpose.* These, in my humble opinion, are the elements of success. They furnish the materials, arrange these in their design and place, and fashion the object of their desire.

Emulation strives for superiority; and, in order to achieve its end, enters the arena of competition, and partakes largely of the nature of rivalry. Emulation is, however, the highest and purest kind of personal contest, and implies opposition without any of the bitterness or envy that often accompany rank and distinction. This is the spirit that should actuate all men in pursuit of the same object and ambitious of lofty attainments. But it is the *sine qua non* for him who would rise to eminence in any art or profession in life.

Perseverance is the motive power that moves the machinery of human life, and is always in demand. It sits by the midnight lamp, and explores the mysteries of science, reveals the secrets of nature, and prepares soothing balms for the ills of life. It solves all problems, laughs at adversity, and triumphs over every obstacle. It has been crowned with titles of distinction; tact, talent, and genius have been associated with it in all its achievements of glory and renown, and have often usurped the honor due to perseverance.

Integrity of purpose hallows the deeds of perseverance and emulation, and stamps the seal of divinity upon every human endeavor, however humble or exalted it may be. It glorifies all forms of labor, from that of the slave to the agonizing passion of the Son of Man in Gethsemane, and arrays in the sacred garb of respectability the work of every honest man.

Emulation, perseverance, and integrity of purpose constitute the chain of destiny. These three form the herculean band that binds the hap-hazard doings of blind Fate to the prison of obscurity. None of these elements can of itself achieve much. It requires the united action of all of them for the attainment of true success. They are the triple jewel in the crown of true nobility. They vest all true greatness in the character of royalty, and deify, in a measure, the lives of the great and good. Endowed with these, one needs not the impulse of inspiration, for he is well equipped for life's unequal contest. They are genii far superior to the superhuman elves of Aladdin's lamp and wonderful ring.

And now we are approaching the time when our pleasant relations will be severed. We have passed through the heat of the conflict with pharmacy, chemistry, and botany, and thus far success has perched upon our banners. We shall never all meet together in these halls again. No more will our voices be heard in high debate in the top of the tower, nor will they be mingled together in the sublime and enchanting melodies of our beautiful class songs. What our position in life will be is largely in our own hands. We make or we mar ourselves.

Emulation, perseverance, integrity of purpose—sacred trinity, upon whose altar the fires of hardship and misfortune are devoted to the cause of knowledge, truth, and virtue—may you ever be the invocation of *our* lives, our constant prayer to Fortune!

After the conclusion of the Class Oration, the President announced that for the first time in the history of the Association, a prize would be presented for the Best Collection and Preservation of Indigenous Plants in Inflorescence.

In 1878, the Alumni Association established what has been known as the Prize Certificate for the Best Collection of Indigenous Plants, but, until this year, no specimens worthy of the prize have been presented, either because the subject was too hard or took too much time and attention. But, however, this year there has been such a set of specimens presented, and the Committee deemed it worthy of the special prize. This has been awarded to Mr. Fred. P. Sher, of Philadelphia.

Mr. Sher came forward, and Prof. John E. Cook, Ph. G., presented the certificate, at the request of the President, with the following remarks:—

Mr. F. P. Sher:—It devolves upon me to present this certificate, which is quite unique of its kind. Botany is certainly one of the most important sciences in connection with pharmaceutical studies. For, considering the fact that so many of the officinal preparations are used in their crude conditions, or in floral conditions, I think that the usual protests against the natural orders, to say the least, un-founded. But, Mr. Sher, speaking seriously, you have made a good beginning, and you have presented a collection that is deserving of all praise, and we hope that it will not be merely the beginning, but, not only for yourself but for others, allow it to be an example to be followed. I think, then, that I echo the sentiment of the entire Association when I say you are fully deserving of this certificate which is now conferred upon you, and which, in behalf of the Association, I ask you now to accept.

Mr. Sher replied as follows :—

I accept it, and I hope to be able to work out the problem to the end. I return my thanks to the gentlemen composing the Committee of the Association for receiving the specimens which I have presented.

The President then stated that :—

We have to-night with us a gentleman who will give us what has never been presented before at our receptions—the history of the Graduating Class. It gives me pleasure to state that Mr. Arthur B. Hammond, of Baltimore, Md., a member of the Graduating Class, has been selected by the Zeta Phi Society to perform this important part of the programme this evening.

CLASS HISTORY, 1884–85.

The Alumni Association of our College, always taking the deepest interest in the classes as they pass from these halls, having a special feeling for the one about to be launched into the arena of life with its trials and vicissitudes, were anxious to know what had happened during the two years of our sojourn here.

I do not know why so unfit a representative as myself should be selected by the Class to prepare its history for presentation to its esteemed friends.

Having no precedent, I have had to hoe my own row alone, and, as quietly as possible, find out what had transpired to interest my hearers.

Every Class has its birth, its struggle into manhood, but never dies.

The time has come when the scrapes, capers and incidents that happened in our midst are to be exposed to view; and, even though it may ruffle some, they should remember that the truth must be told.

The Class began its existence on the 1st of October, 1883. How well we remember our first climb to the pharmacy room, and there, amidst the Seniors of the preceding year, we sat face to face with the stern, intelligent countenances of the Faculty, Trustees and Committeemen of our College!

Prof. Sadtler was the orator of the evening; and before he had half finished his exhaustive discourse on Higher Chemistry, a glance around the room showed terror-stricken faces, white cheeks and trembling lips.

The Trustees smiled grimly, the Committee blinked, and the Faculty looked humorous, the Seniors guyed us, and asked how we liked it, and laughed in our faces; we were dismayed. But this state of affairs was too terrible to last long, and at the expiration of another day we assembled as full-fledged Collegians, and were at once thrust into the mysteries of our profession.

Our Class comprised 208 matriculants; one of this number was a lady. We felt highly elated in thus being honored with her presence, not wishing to be outdone by the previous Class, which was distinguished by its accomplished female graduate. We were greatly disappointed when we learned, through misfortune, she was compelled to abandon her chosen pursuit.

Left to ourselves, we were ground down to the stern realities of College life.

Time flew rapidly, and Christmas was at hand; we were happy. The Professor of Chemistry delivered the parting lecture. It was upon Aqua—a fitting subject for such an occasion; and told us, in words of plain importance, that, as he had lectured upon the many virtues possessed by water, would advise us to confine ourselves to its use during our festive holidays.

His advice was, no doubt, observed, as all were in bright trim when they appeared at the beginning of the new year.

As was to be expected from a class so large, our professors were given considerable trouble from the noisy members.

The Chair of Materia Medica became exasperated on several occasions, and, although he called them youngsters and other titles quite as bad, they persisted in their unwonted pleasure.

The Committee of Discipline, whom we had often been warned against, took the matter in hand, and resulted in bringing two of our number before the College and Class, to apologize, before being allowed to resume their attendance. Our spirits were depressed, and each resolved that a repetition should not occur.

Another event occurred during Junior year, and that was perpetuated on Rossie. Rather loud and boisterous talking, in front of the College building one evening, attracted the attention of "One of the Finest." He requested the crowd to move on. Rossie became indignant, and insisted upon staying and having satisfaction. Higher authority was appealed to, but fortunately, being a personal friend of the chief of the district, was dismissed. Rossie returned a wiser but sadder man.

The 14th of February rolled around, and with it examination day. It was our first trial. A glance at the questions sent a thrill to the stoutest heart, and every face was a study. We worried the day through, proving disastrous to many, and our Junior year was over.

We hailed vacation with delight. Many returned to their various distant homes, while others found comfort in the Quaker city. Amongst those who remained, botanizing instantly became the rage.

Under the leadership of our genial Senior Professor, we scoured the suburbs of the city with honest intent of obtaining botanical knowledge. At first we enjoyed it—it was a novelty, but soon became monotonous, and the pretty rural lass threw her charms about us and drew our attention from more important duties. Base-ball then took the lead, and excitement ran to feverish heat. Violaceæ and Rosaceæ were the names of the contesting clubs, under the respective command of Captains Ad. Eberly and John Moore. Chairman Green acted as umpire. The struggles were fierce and long for the mastery, resulting finally triumphant for the Violets.

Our Senior Year—looked forward to with admiration and verdant jealousy as Juniors—opened in the Fall with brilliant prospects. From north, east, south and west our land sent her representatives; from Canada, with her wide dominions, came two of our number; and even to the banks of the sunny Rhine we extended our membership.

We were kindly welcomed by the Professors, who reminded us of the advantages of strict attention and close application.

We set hard to work, realizing it was our only hope. Although sincere in our efforts, we lost no opportunity which afforded sport, always showing our appreciation of anything worthy of notice, and the tearful remarks of the Professor of Pharmacy on Resin Podophyllin will long be remembered.

During the Senior Year our Class received the valuable addition of Mr. C. C. Ramey and Krao; the former our hard-fought-for Orator, a hard student and an honor to the Class; the latter was also known by the title of "The Doctor." He was very valuable as an assistant in the pharmaceutical laboratory; his appearance always called forth most hearty applause, even the serious countenance of Prof. Trimble was forced to smile when attracted by his antics. I am happy to state that we have the pleasure of graduating "Brown," a gentleman who has been connected with the College for quite a while, and saw fit to leave with us. Other noted characters, such as Sulphuric Moses and Peters, are familiar objects of interest. Sulphuric was our funny man, and particularly anxious about everybody's liver; his anger was aroused when we sang "Hang Sulphuric on a sour-apple tree."

Politically, our class was strongly Republican. This being an important presidential year, the excitement caused by its influence raged fiercely amongst our members, who did not hesitate to eulogize their favorite candidate. Bets were freely made and exchanged, and for the time studies were laid aside.

On the 5th of November, when the result of the election favored the Plumed Knight, his enthusiastic admirers formed in line and paraded in his honor. They looked fine, with the golden badge of the "Zeta Phi" shining upon their breasts, and note-books protruding from their pockets; they shouted until they were hoarse, and went home feeling that they had done their duty. But the old adage remains true, "He laughs best who laughs last," and the Democratic members soon gave their Republican friends to understand that Blaine's soap was not officinal in the U. S. Pharmacopœia. Trenton was the worst used-up man in the College; and be it known he was from that all-important State of Jersey.

One afternoon in Analytical Chemistry Room, a few days after the election, I heard a general smash-up of test-tubes, funnels, beakers, etc. On glancing over my shoulder I beheld Trenton with his hands thrust wildly through those raven tresses, and he exclaimed, in tones of bitterness, that he could not work, that he had lost to the tune of sixty dollars. He, however, won a brand-new high hat, and started the hat craze, which spread widely through the Class.

Our societies formed a very important era in our history. The "Zeta Phi," long known for its social advantages, was full of excitement during the entire course. It had charge of the elections for Class officers, and, like other important bodies, had its contentions. A ring was accused of being formed to run the society. Who formed the ring was hard to determine. At any rate, the so-called clique was successful in all its contests.

I regret to say that its esteemed and respected President, Mr. John D. Moore, being stricken down upon a bed of sickness, was unable to finish the course with us. A suitable set of resolutions were adopted, showing the high regard we held towards our unfortunate leader. Vice Eberling did the honors of the chair with dignity and appreciation.

The Theta Delta Sigma Fraternity, a secret organization, not yet recognized by the College, bids fair to become a brilliant society, although a member has never been able to fathom the mysteries of its closed session. It acted wisely in selecting Mr. Frank T. Landis, a gentleman of intelligence and refinement, for its "Worthy Chairman."

The history of this Class would be incomplete without mentioning the kindness and courtesy with which we were treated by our Professors. Never losing patience with us, they seemed untiring in their endeavors for our success. Respecting and admiring them as Professors, we will ever look upon our personal relations with them as among the greatest pleasures of our college life. Nor can we forget the kind interest of our Quiz-masters and respected Actuary, who in every way strove to prepare us for the ordeal through which we have just safely passed.

Now remains for me to say farewell. From the time we met as Juniors until now our relations have been of the most cordial nature. Realizing that our course was a mutual one, striving to help each other, we have won the highest honor our College can bestow.

Many pleasant hours have we spent within these walls, and how often have they echoed our merry songs and laughter! Our paths in life will now diverge, each to his own course; but wherever we may wander, in whatsoever sphere we may be placed, we will recall the memories of our College days with pleasure; and may we never blush to own our membership to the Class of '85.

Our college days are over, our history as a Class has ended, our struggle in life begun. May we continue the good work commenced here until our researches are extolled in categories written by more intelligent men; and, hoping that we may be an honor to ourselves and to our Alma Mater, farewell.

After the conclusion of the Class Historian's address, which was highly interesting and entertaining, as was demonstrated by the applause which Mr. Hammond received during its delivery and also after the speaker had concluded his remarks.

The President now announced that the time had now arrived to bestow honor upon the Junior Class, and stated that—

The Alumni Association not only endeavors to honor the best men in the Senior Class, but also wishes to stimulate the best men in the Junior Class by awarding a certificate to the one who receives the highest general average. This year Mr. Walter Bowden Cheney, of South Manchester, Conn., has been deemed worthy of this distinction, but Mr. Cheney has been obliged to return home. In his absence we will call upon Mr. John Geo. Engler, a member of the Graduating Class, and a friend of his, from the same State, to receive it for him; and requested Mr. Jos. W. England, Ph. G., to present it on behalf of the Association.

Mr. England then advanced, and said:—

Mr. Engler:—The memorable contest of but few days ago has come and gone. Whilst it waged the battle was short, sharp, and decisive; the bullets, in the form of the professors' queries, flew annoyingly thick and fast; but the well-trained troops gallantly fought with the zeal of a worthy cause, and the happy victors have right worthily won their well-earned laurels.

It is, then, with pleasure, indeed, that I perform the duty assigned me on the part of the Alumni Association of our College, of presenting you, as the representative of Mr. Cheney, with this Certificate of Proficiency attained in the late Junior Examinations, he having received the highest general average of his Class, and I trust that while its reception may be the means of proper and just gratification and pride at the honor conferred, its ownership may ever serve as a stimulus in future endeavor, towards perfection in the chosen calling of his life.

Mr. Engler replied as follows:—

GENTLEMEN:—In accepting for Mr. Cheney this well-deserved testimonial, permit me to heartily thank you in his behalf, and to assure you that its possession will prove an incentive to further prosecution of the studies which is to be his life work, and for which he has shown such aptitude.

The Secretary then read the list of Junior students, 32 in number, which had received the grade of honorable mention, as follows:—

Milton Horace Bickley, Chester, Pa.; John Charles Boyd, Paris, Ill.; Robert Cook Bicknell, Madisonville, Tenn.; Morris Winfield Brecht, Lancaster, Pa.; Daniel Wm. Cahill, Watertown, N. Y.; Henry Belling Campbell, Bridgeton, N. J.; Arthur H. Cohn, Milwaukee, Wis.; James Adams Ferguson, Philadelphia, Pa.; Jacob Livingood Fisher, Punxsatawney, Pa.; Wm. Grant Greenawalt, Chambersburg, Pa.; Frank Devie Hall, Newark, Ohio; Charles Tomkins Heller, Bridgeton, N. J.; James Rutledge Henderson, Spartansburg, S. C.; Charles E. Hewitt; William Hiecke, Milwaukee, Wis.; Seth Caleb Johnson, Absecom, N. J.; Samuel Stephen Jones, Wilkesbarre, Pa.; Edward Kremers, Milwaukee, Wis.; Henry Kiefer Kroh, Conshohocken, Pa.; Burr. Wm. McFarland, Bordenton, N. J.; Charles Henry McConnell, Philadelphia, Pa.; Caswell Armstrong Mayo, Columbus, Miss.; Wm. Edgar Neil, Moundsville, Wis.; F. Wm. Pantzer, Sheboygan, Wis.; Samuel Washington Prewitt, Columbia, Tenn.; Henry Cook Risher, Waco, Texas; David Rosenbaum, Mount Vernon, Ind; Almon Ami Shead, Milwaukee, Wis.; Frank F. Smith, Richmond, Ind.; Charles Spalding, Austin, Texas; John Wm. Starr, Middletown, Pa.

The President now announced that it was with sincere regret that the next item on the programme would have to be omitted, viz., The Future of the Class.

Mr. Elmer B. Kyle, of York, Pa., who was elected by the Zeta Phi Society as Class Prophet, had sent a communication to the Secretary, saying that, owing to illness, he would be unable to be present to deliver the proposed address.

The President now stated that we had now arrived at the last article upon the programme, viz., Concluding Remarks.

Prof. John M. Maisch, who had occupied a position in the rear of the room, was loudly called for, and advanced to the front of the desk, amid the cheers and stamping of the Graduating Class, and spoke as follows:—

I am very sorry that I was compelled to be late this evening. These gentlemen know that during the lecture season it has been my habit to be very punctual; but coming in this evening I was really unaware that there were seats forward, or I should have stepped down to the front, so I thought I would endeavor to hide in the remotest corner of the room and endeavor to escape being noticed, although I might have known better, since every one of these gentlemen are well versed in discovering fibro-vascular bundles, and all kinds of minute cells.

Being called upon to say a few words, Mr. President, I am really at a loss to make any remarks, after the address by my friend Dr. Stewart and after the elegant address of the Orator of the evening as well; but I may say, in relation to what I have heard from the Class Historian, that this evening I have learned something that occurred during the last session which I was not aware of before, and that is the song. With the air I was quite familiar, although I could not catch the words. (Applause.) However, on the present occasion, I merely wish to say to the gentlemen graduates that their success in life depends, of course, to a considerable extent upon a certain business tact, but, combined with that, should certainly be knowledge and honesty; and in all your future struggles remember one thing, and that is this, that, although the profession of pharmacy, like every pursuit, is overcrowded, there is plenty of room near the top of the ladder.

Profs. Remington and Sadtler were now loudly called for, but they being absent, the Class called upon Mr. Thos. S. Wiegand, Ph. G., the Actuary, for some remarks.

Mr. Wiegand came forward and spoke as follows:—

I do not like to go back upon the Class. I did for once for this special reason: I thought the professors ought to have the first and only chance, and you get so much better used to hearing them speak, that you would appreciate anything they would say more than what I would say.

For the kindness which this Class has always extended to me, they have my thanks. It has always been my privilege to serve them to the best of my ability. I must say that it will always be a pleasant thought to call this Class to my memory, and always will be a gratification to know that I have been connected with the Class of '84 and '85; and also a pleasure to know the members of the Junior Class of 1884 who will graduate in 1886.

Prof. Henry Trimble, Ph. G., was now called upon, and spoke as follows:—

Gentlemen:—I am sorry that some of the professors appear to be absent, and that the speaking will devolve upon the few. I have been interested in hearing the remarks this evening; the Class Historian recalled a story to my mind, and I may relate it for the benefit of the Class.

I saw a statement in a paper—probably some of you have seen it; but I can repeat it, and it will be new to those who have not—in which a student came up for examination—I suppose for a doctor's degree; whether doctor of philosophy or doctor of medicine, I do not know. In a verbal examination he was asked, finally, to define "To create," and his answer was, "To make something out of nothing." The professor remarked to him that was very good, and they proceeded to make him a doctor. (Applause.) I want to add a little to that for the benefit of this Class. It occurred to me that while they might create some doctors in that manner, they could not create one pharmacist; and, from my experience with this class of students graduating this year, I feel that almost nothing has been left out of something, but not that something has been created out of nothing.

Prof. John E. Cook, Ph. G., being now called upon, made a a few remarks, as follows:—

You are calling upon me for a speech this evening. For about five months I have been giving you short speeches, and I take this occasion to thank you for your quiet demeanor towards me.

This brings the term to a close, and at the same time I must say that I am well pleased with those before me. I will not draw attention to anything in the past. I can only say I congratulate you sincerely on this present occasion, and give you my best wishes for your success in the future.

The Secretary was loudly called for, and said :—

GENTLEMEN :—I have no speech to make to you, but have one or two requests; and one of them is that those who have received the prize certificates will please return them to me, as I wish to get one more signature of one of the officers upon them; also that all those who have joined the Alumni Association can get their membership certificates in the laboratory to-morrow (Saturday) afternoon, from 2 to 5 o'clock, P. M.

The Secretary then announced that the Spring Course in Microscopy would meet in the Alumni room on Wednesday afternoon, April 1st, and hoped that all of the Graduating Class who expected to remain in the city during the summer would come and join the Class; also that all the Juniors who expected to remain would do likewise, and thus aid the Association in her work upon this important feature of study.

Dr. A. W. Miller was now called for, and came forward and responded as follows :—

GENTLEMEN :—I was laboring under the happy delusion that after my duties this evening I would be allowed to rest in peace in my secluded corner. It may be known to some of you that there was a reception and banquet last night of the Zeta Phi Alpha, and in the course of the remarks my esteemed friend Kline incidentally said that his business intercourse in the relation of wholesale druggist had been much more pleasant with the graduates in pharmacy than those who were not graduates. This remark has been occupying my attention to a certain degree since last night. Having pondered fully over it, I am prepared to substantially endorse it. I am prepared to state that the educated pharmacist is a reasonable being, that he is not hypercritical, not over-exacting; while, on the other hand, the uneducated pharmacist in but too many cases is the reverse of all this.

In the course of my remarks I incidentally mentioned oil of lemon. A gentleman had been requested to prepare a paper by the Commissioner of New York on the oil of lemon, and the direction given was that on being taken from the can it should be filtered. Shortly afterward the editor sent me a letter (received from one of his correspondents in Chicago), inquiring what means there were for filtering oil of lemon, stating that he had tried filtering the oil through sand and bone dust, but never made a success of it, and could not understand what I meant by filtering the oil of lemon. I trust that that will not be said by any of this Class. I trust you will always have a pleasant business intercourse with those dealers with whom you may come in contact.

The President then stated that it was now time to bring these exercises to a close, and addressed the audience as follows :—

LADIES AND GENTLEMEN :—We thank you for the close attention you have given to all that has transpired to-night, and we feel honored that so many have remained to the close of the exercises; and I do hereby declare this Twenty-first Annual Reception to the Sixty-fourth Graduating Class closed.

Thus ended the exercises of one of the most pleasant receptions to a Graduating Class ever given by the Alumni Association, and will long be remembered by every one who participated in the evening's enjoyment. Although the Class will never meet again as a Class, and in a few days will be scattered over our broad land, north, south, east and west, yet it is certain that the bright and enjoyable events of the evening will last in memory as long as life shall last, and will cause many happy reflections of the pleasant hours, as well as the hours of toil, spent at the Philadelphia College of Pharmacy.

Attest, WM. E. KREWSON, *Secretary.*

The First Alumni Gold Medal was awarded in 1871, and has been given each year since to the student who has received the highest general average of his Class:

*The First was presented March 15, 1871, to Charles F. Bolton, of Frankford, Philadelphia, Pa. Class of 1871.

Second. Presented March 15, 1872, to Wallace Procter, of Philadelphia, Pa. Class of 1872.

Third. Presented March 18, 1873, to E. C. Batchelor, of Macon, Miss. Class of 1873.

Fourth. Presented March 10, 1874, to Edward Seymour Dawson, Jr., of New York. Class of 1874.

Fifth. Presented March 15, 1875, to Howard Grant Jones, of Philadelphia, Pa. Class of 1875.

Sixth. Presented March 13, 1876, to Joseph Le Roy Webber, of Springfield, Mass. Class of 1876.

Seventh. Presented March 15, 1877, to Olaf Martin Oleson, of Fort Dodge, Iowa. Class of 1877.

*Eighth. Presented March 13, 1878, to David Patrick Miller, of Virginia. Class of 1878.

Ninth. Presented March 12, 1879, to Joseph Brakeley, of New Jersey. Class of 1879.

Tenth. Presented March 15, 1880, to George Havens Colton, of Springfield, Mass. Class of 1880.

Eleventh. Presented March 14, 1881, to Louis Genois, of New Orleans, La. Class of 1881.

Twelfth. Presented March 13, 1882, to Virgil Coblentz, of Springfield, Ohio. Class of 1882.

Thirteenth. Presented March 14, 1883, to Frederick Wm. Jungkunz, of Freeport, Ill. Class of 1883.

Fourteenth. Presented March 17, 1884, to Harry Clifford Cook, of Columbus, Ohio. Class of 1884.

Fifteenth. Presented March 20, 1885, to Henry Chas. Christian Maisch, of Philadelphia, Pa. Class of 1885.

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* Deceased.

Minutes of the Executive Board.

1884–1885.

MINUTES OF THE FIRST REGULAR MEETING.

Alumni Room, Hall of the Philadelphia College of Pharmacy,
No. 145 North 10th Street,
May 1st, 1884.

The First Regular Meeting of the Executive Board of the Alumni Association was held this afternoon in the room of the Association at the College.

The meeting was called to order at 3.45, P. M., by the President, Dr. Chas. A. Weidemann.

The Secretary called the roll, and the following members were present: President, Dr. Chas. A. Weidemann; Recording Secretary, Wm. E. Krewson; Corresponding Secretary, David W. Ross; Treasurer, Edward C. Jones; Members of Executive Board, Henry Trimble, C. Carroll Meyer, Wallace Procter, Jos. W. England.

A communication was received from Second Vice-President, Wm. R. Warner, Jr., regretting his inability of being present, on account of being out of the city.

Messrs. Jacob S. Beetem, Thos. H. Potts, Lucius E. Sayre and Thos. S. Wiegand were also noted as being absent.

In the absence of any minutes to read, the President called for reports of Committees.

The Secretary read the report of the Committee on Reception and Prizes, as follows:—

Alumni Room, No. 145 N. 10th Street,
Philadelphia, Pa., May 1st, 1884.

To the President, Officers and Members of the Executive Board:—

GENTLEMEN:—Your Committee appointed February 7th, 1883, on Reception and the Distribution of Alumni Prizes, would submit the following as their report:—

The Twentieth Annual Reception to the Sixty-third Graduating Class was held in the second-story lecture-room of the College, on the evening of March 17th, 1884.

The meeting was very largely attended by the students, members of the Alumni and invited guests. The President opened the meeting with a few introductory remarks, after which the Graduates who had made application for membership during the year were received as members of the Association.

The Oration was delivered by our fellow-member, Robert Hays Vansant, Ph. G., Class of 1879, and was listened to attentively by the audience.

The Valedictory Address on behalf of the Graduating Class was delivered by Wm. H. Gano, Jr., of Wilmington, Del., in a very earnest manner from memory.

The usual Alumni Prizes were presented to those receiving the highest general average in the several branches, as follows:—

Gold Medal was presented to John Chas. Falk, of St. Genevieve, Mo., by the President, Lucius E. Sayre.

Certificate on Materia Medica, to Harlan Page Pettigrew, of Sioux Falls, Dakota.
" " Pharmacy, to Harry Clifford Cook, of Columbus, Ohio.
" " Chemistry, to Frank Gibbs Ryan, of Elmira, N. Y.
" " Operative Pharmacy, to Miss Grace Lee Babb, of Eastport, Me.
" " Analytical Chemistry, to Wm. Lincoln Cliffe, of Philadelphia, Pa.
" " General Pharmacy, to Henry Charles Plenge, of Charleston, S. C.

The Junior Testimonial was presented to Wm. Henry Clark, of Madrid, N. Y.

The different certificates were presented by Messrs. Dr. Charles A. Weidemann, Wallace Procter, Louis Genois, Joseph L. Lemberger, Charles Bullock, Wm. J. Jenks and Thos. H. Potts, with appropriate remarks, and the recipients received them with their individual thanks.

The Committee, in conclusion, congratulate the Alumni Association upon the successful year which the Twentieth Annual Reception has closed, and hopes the incoming year will be as prosperous.

As the labors for which the Committee were appointed have been completed, they desire to be discharged from further service.

Respectfully submitted,
Wm. E. Krewson,
Edward C. Jones,
David W. Ross,
Committee.

Mr. C. Carroll Meyer moved that the report of the Committee be received and spread upon the minutes, and the Committee discharged. So ordered.

The Committee on Publishing the Twentieth Annual Report, reported progress; stating that the contract had been awarded to Messrs. Burk & McFetridge, they agreeing to print 3,000 copies for $480, the same size as last year's Report. Most of the copy was in the hands of the printers, and the first form was almost completed. About June 1st to 15th the Report would be completed and ready for distribution. The spaces for advertisements were almost all taken; five or six pages are yet left. The Secretary had experienced considerable difficulty in procuring advertisements this year; also in collecting the material for the Report, which has in a great measure delayed the issuing of the Report.

The Secretary stated that he had notified the Committee of Five, appointed at the Annual Meeting on the Reed case, but one member had accepted as yet—Mr. Henry A. Newbold. Dr. A. W. Miller was holding his acceptance under consideration. Messrs. Edwin M. Boring, Wallace Procter and Wm. J. Jenks had declined serving on the Committee.

The President stated that he would appoint others upon the Committee, to fill the places of those declining, as soon as he could select suitable persons for that duty, and that he would give their names to the Secretary, so that they might be properly notified.

The Secretary stated that he had also notified the Committee, appointed by the President at the Annual Meeting, on Memorial Tablet, and that all of the Committee had accepted the appointment. The Committee is: Messrs. Wm. C. Bakes, Thos. S. Wiegand, Jos. P. Remington, Chas. Bullock and Henry Trimble.

The Secretary stated that he had received a communication from the *Druggists' Circular*, asking him to forward a list of the various meetings of the Association, together with the dates of holding the same, and that he had complied with the request. On motion, the communication was received and filed.

The following applications for membership were received since the Annual Meeting, viz.:—

Milton Smoker Falck, Class 1884, Lancaster, Pa.
Alfred J. Wenner, Class 1884, Allentown, Pa.
Theodore Sprissler, Class 1879, No. 601 S. Ninth St., Phila., Pa.
Clayton R. Myers, Class 1878, S. W. cor. Eighth and Walnut Sts., Phila., Pa.
Emlen Martin, Class 1884, Rancocas, N. J.
Henry Francis Schuldt, Class 1884, No. 2565 Coral St., Phila., Pa.
Ephraim Zeigler Hoffman, Class 1884, Maytown, Pa.
Samuel D. Crawford, Class 1884, Nazareth, Pa.

The Secretary reported that the above applicants had paid the required fee, and that they had received their Certificate of Membership.

The Secretary announced the death of Wm. Wood Stockton, Class of 1876, who died at Huron, Dakota, April 27th, 1884. Mr. Stockton joined the Association November 12th, 1883.

The following bills were presented and read, after being approved by the President and Secretary, viz.:—

To C. R. Morgan, for reporting Twentieth Annual Meeting,		$5 00
To T. H. McCool, for filling in 79 Membership Certificates @ 30, ...	$23 70	
for filling in 3 Prize Certificates @ 40,	1 20	
" " " " " " @ 65,	1 95	
" engrossing 1 Junior Prize, . .	5 00	31 85
To Wm. E. Krewson, Secretary, for ribbon and expressage, ...	65	
for cap and wrapping paper, .	50	
" postage and incidentals, .	2 75	3 90
Total, ...		$40 75

Mr. David W. Ross moved that the bills be paid. So ordered.

The Secretary stated that Dr. Susan Hayhurst, of the Women's Hospital, and a member of our Association, had donated a full set of the Reports of the Women's Hospital, from No. 1, Jan., 1862, to No. 23, Jan., 1884, inclusive, for the Alumni library.

On motion of Mr. Henry Trimble the Reports were accepted, and a vote of thanks was tendered to Dr. Hayhurst for the contribution.

The Secretary having another engagement at 4½, P. M., desired to be excused, and requested C. Carroll Meyer to act in his place.

The President excused him, and Mr. Meyer then acted as Secretary during the remainder of the meeting.

The subjects referred to this meeting by the annual meeting were then taken up, as follows:—

Mr. Henry Trimble moved that the subject of summer class for Juniors be laid upon the table, which was seconded by Jos. W. England, and unanimously carried.

Mr. Edward C. Jones moved that the subject of having the museum opened be referred to the Board of Trustees, and that the President and Secretary be requested to send a communication to the Board of Trustees, requesting them to have the museum and library opened every day at certain hours, and have a suitable person present during the time they were open to impart information and for the protection of specimens, books, etc. Carried.

Mr. Henry Trimble moved that the Secretary write a communication to the Zeta Phi Society, requesting them to elect a Class Historian to give a history of the Class at the Annual Reception of the Alumni in March, 1885. Carried unanimously.

Mr. C. Carroll Meyer moved that a Committee of Five be appointed to take into consideration the proper celebration of the Twentieth Anniversary of the Association, and that the committee have full power to act. Mr. David W. Ross seconded the motion, which was carried unanimously.

The President appointed the following as the committee :—

C. Carroll Meyer, *Chairman* : Edward C. Jones, Lucius E. Sayre, David W. Ross and Jos. W. England.

The subject of appointing delegates to the Pennsylvania Pharmaceutical Association, which meets at Williamsport in June, now came up for discussion.

The Secretary *pro tem.* moved that Mr. David W. Ross and Mr. Wallace Procter be appointed as delegates to attend the Pennsylvania State Pharmaceutical Association at its meeting in June next. Carried unanimously.

Mr. E. C. Jones moved that the President have power to appoint delegates to attend the thirty-first annual meeting of the American Pharmaceutical Association, which will be held at Milwaukee, Wis., on Tuesday, Aug. 26th, 1884. Carried.

On motion, the Board adjourned to meet at the call of the Committee on Twentieth Anniversary.

C. CARROLL MEYER, *Secretary pro tem.*

Attest, WM. E. KREWSON, *Secretary.*

MINUTES OF ADJOURNED MEETING.

Hall of Philadelphia College of Pharmacy,
No. 145 North 10th Street, Philadelphia, Pa.
May 23d, 1884.

An adjourned meeting of the Executive Board of the Alumni Association of the Philadelphia College of Pharmacy was held in the Library Room of the College this Friday afternoon, May 23d, 1884.

The meeting was called to order at 4, P. M., by the President, Dr. Chas. A. Weidemann.

The roll was called, and the following members were present, viz.: President, Dr. Chas. A. Weidemann; Treasurer, Edward C. Jones; Secretary, Wm. E. Krewson; Henry Trimble, Wallace Procter, David W. Ross, and C. Carroll Meyer.

On motion of the Secretary, the reading of the minutes of the last meeting were omitted until our next regular meeting.

Communications were received from Messrs. Jacob S. Beetem, Wm. R. Warner, Jr., and Jos. W. England, regretting that previous engagements would prevent them from being present.

Messrs. Thos. H. Potts, L. E. Sayre, and Thos. S. Wiegand were also noted as being absent.

The President stated that this meeting was called in accordance with the resolution passed at the last meeting of the Board, viz.: "Adjourned to meet at the call of the Committee on Twentieth Anniversary."

The report of the Committee appointed at the last meeting of the Board on Celebrating the Twentieth Anniversary was then read.

PHILADELPHIA, 5th mo. 15, 1884.

The Committee on Anniversary met this afternoon, and organized by appointing C. Carroll Meyer, Chairman, and E. C. Jones, Secretary. After a free interchange of views in reference to an excursion to Atlantic City, Cape May, and other resorts nearer home by railroad, were talked over, we were united in recommending a trip on the Delaware to Woodland Beach, and appointed C. C. Meyer and David W. Ross to make arrangements in engaging the boat, etc. Edward C. Jones was appointed on Printing; Lucius E. Sayre, on Literary Exercises; C. C. Meyer, on Social Entertainment.

The work has progressed as far as engaging band, having circulars printed, etc., and now what remains is to have a sufficient number of tickets sold so as to make the excursion a success.

E. C. JONES, *Secretary of Committee.*

On motion of Wm. E. Krewson the report of the Committee was received and ordered spread upon the minutes.

Mr. E. C. Jones spoke in reference to the excursion, and hoped that all of the members of the Board would assist in disposing of the tickets. It would be necessary to visit each store and try and interest the druggists in the matter.

It was moved and seconded that Dr. Miller be requested to assist in procuring talent for the literary exercises of that day. So ordered.

The Secretary moved that the Committee on Excursion be authorized to have 250 paste-board placards printed in order to have them hung up in the different stores. So ordered.

It was also ordered that the Secretary of the Committee be authorized to send a circular to all the resident members and druggists of the city.

It was suggested that the members of the Board distribute the tickets and visit each store, dividing the city up in sections.

Mr. E. C. Jones stated he would take West Philadelphia and south of Market, west of Broad.

D. W. Ross stated that he would take the district north of Girard Avenue and east of Second street.

W. E. Krewson north of Girard Avenue and west of Second to Schuylkill River.

Dr. C. A. Weidemann west of Broad, between Market and Girard Avenue.

Mr. C. C. Meyer stated that he and Mr. Jos. W. England would take south of Market and east of Broad Streets.

Mr. Wallace Procter and Henry Trimble desired to be relieved from serving on account of other duties.

The Secretary stated that the President had appointed the following gentlemen to serve upon the Reed Committee in place of those who declined, viz.:

A. P. Brown, of Camden; Henry P. Thorn, of Medford, N. J.; Wm. R. Laird, of Jersey City, N. J., and Geo. I. McKelway, of 1410 Chestnut Street, Philadelphia, Pa.

The Secretary further stated that he had notified the above gentlemen of their appointment, and that Mr. A. P. Brown and Geo. I. McKelway had positively declined to serve on account of other engagements. Mr. Wm. R. Laird and Mr. Henry P. Thorn had both accepted the position and that there was still two vacancies on the Committee.

The President stated that he would appoint two others as soon as possible in order to have the Committee completed.

The President appointed Louis Genois, J. W. Worthington and Clement B. Lowe, as the Committee on Deceased Members for the years 1884 and 1885.

There being no further business, on motion of the Secretary the Executive Board adjourned.

Attest, **Wm. E. Krewson**, *Secretary*.

MINUTES OF THE SECOND REGULAR MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 North Tenth Street, Philadelphia, Pa.,
August 7th, 1884.

The regular meeting of the Executive Board of the Alumni Association was called to meet at Belmont, Fairmount Park; but, owing to the unfavorable weather, the meeting was held in the Library Room of the College.

The meeting was called to order at 4.30 P. M. by the President, Dr. Chas. A. Weidemann.

The roll was called, and the following members were present: President, Dr. Chas. A. Weidemann; First Vice-President, Jacob S. Beetem; Treasurer, Edward C. Jones; Secretary, Wm. E. Krewson; Executive Board—Henry Trimble, C. Carroll Meyer, Jos. W. England and Thos. S. Wiegand.

A communication was received from David W. Ross, stating that he would be absent from the city; Wm. R. Warner, Jr., Wallace Procter, Thos. H. Potts and Lucius E. Sayre were also noted as being absent.

The minutes of the First Regular Meeting and of the Adjourned Meeting were read and approved.

The Secretary read the Report for Preparing and Publishing the Twentieth Annual Report, as follows:—

Philadelphia, Pa., August 7th, 1884.

To the President, Officers and Members of the Executive Board of the Alumni Association of the Philadelphia College of Pharmacy:—

Gentlemen:—Your Secretary, who was instructed by the Executive Board, February 7th, 1884, to publish the Twentieth Annual Report of the Alumni Association, submits the following report:—

The contract for printing the Report was awarded to Messrs. Burk & McFetridge, of 306 Chestnut street, after receiving estimates from several well-known printers of the city, and they being the lowest bidders; and this firm having already printed the two last Reports and given satisfaction to the Association.

The estimate was based upon the style and size of last year's Report, which contained 208 pages and was for 3,000 copies, at a cost of $480.

The Report this year is not quite so large as last year's, containing, including advertisements, 186 pages, or 22 pages less than the Report of 1883. The bill rendered is $468. or $12 less than the estimate given.

Your Secretary solicited and received 25½ pages of advertisements, besides the three pages of the covers and the special page taken by the printers—in all, 29½ pages from 37 different firms, including the College.

The amount received from the advertisements is $327.50, which leaves a balance of $140.50 to be paid out of the funds of the Association.

Your Secretary had 1,200 large envelopes made for mailing the Reports outside of the city, at a cost of $10. He also purchased 1,000 four cent postage stamps, making a total cost of mailing of the Reports $50.

The Reports have been mailed to all those members residing outside of the city, also to the Junior students of 1883 and 1884 Class, who have requested the same. The number mailed thus far is 600 copies.

Your Secretary has personally distributed the Reports throughout the city and suburbs, except the district south of Market and west of Broad street, which our worthy Treasurer, Mr. Edward C. Jones, kindly consented to do.

Our fellow-member, Mr. Chas. W. Hancock, assisted your Secretary in the distribution of the Reports in West Philadelphia personally and by the use of his horse and carriage. The cost of the distribution of the city (including the hire of a horse and carriage for 2½ days, $10, and car fare, $2.96, etc.) is a total of $12.96.

Every drug store was visited in the city, as well as Germantown, Frankford, Bridesburg, Richmond, Falls of Schuylkill, Manayunk and Chestnut Hill, and a copy left in each store, and wherever a graduate or student of the College was employed in the store one was presented to them, in all 890 copies of the reports were thus given out by your Secretary, besides the number given out by Mr. Jones in his section.

Although the reports cost considerable more than the amount received by the advertisements, yet in the end the Association will not lose anything, as the interest of the affairs of the Association is becoming more manifest from year to year, not only by our active membership, but by all the graduates of the College and druggists of the city, and from the large number of congratulatory letters received by your Secretary from those members residing outside of our city, showing conclusively that it is appreciated by them, and is the means of increasing our membership and cementing our graduates more firmly together, and thus aiding our old Alma Mater in her thorough work of training the future apothecaries and chemists of our country.

The balance of the stamps and envelopes will be used in sending the reports to the various libaries and institutions of our own country and Europe, and to graduates of our College who may reside in other parts of our land, thereby hoping to remind them of their college days and stimulate them to perform their duty in becoming active members of our Association.

Respectfully submitted,

WM. E. KREWSON, *Secretary.*

Henry Trimble moved that the report be accepted and spread upon the minutes, and that the thanks of the Executive Board be tendered to the Secretary for the very able manner in which he discharged his very difficult task. So ordered.

Mr. C. Carroll Meyer, Chairman of the Committee on Twentieth Aniversary, read the following report, which, on motion of the Secretary, was accepted and ordered spread upon the minutes, and the Committee was discharged, with the thanks of the Board, viz.:—

PHILADELPHIA, August 7th, 1884.

The Committee on Celebration of the Twentieth Anniversary of the Alumni Association of the Philadelphia College of Pharmacy respectfully reports:—

The excursion down the river and bay on steamboat Thomas Clyde was a success, not only in a social and enjoyable way, but financially as well, having cleared over $15 above expenses.

A number of our members, with their families, participated. One and all were of the same opinion, "That it was a day well spent." While at Woodland Beach a few members accompanied Prof. Maisch on a botanical excursion to the Grove, from which both pleasure and knowledge was derived. On the way down quite a large number enjoyed themselves dancing on board the steamboat.

A very pleasing entertainment was given in the parlor of the Clyde on her return trip, participated in by Miss F. Lizzie Peirce, Miss Sallie A. Gesemeyer, Miss Blank, and Messrs. John Duffy, Harry Arbuckle, and Lucius E. Sayre. To all the above the thanks of the Association are certainly due.

We are also happy to state that there were no accidents or trouble of any kind to mar the pleasure of those participating.

The state of the weather was all that could be desired, and was indeed a very pleasant and happy day for all.

Respectfully,
C. CARROLL MEYER,
Chairman.
EDWARD C. JONES,
LUCIUS E. SAYRE,
JOS. W. ENGLAND,
DAVID W. ROSS,
Committee.

The Secretary read the following communication:—

PHILADELPHIA, July 22d, 1884.

Wm. E. Krewson, Esq., Secretary of the Alumni Association of the Philadelphia College of Pharmacy.

MY DEAR SIR:—The following-named gentlemen are appointed delegates to represent the Alumni Association of the Philadelphia College of Pharmacy at the meeting of the American Pharmaceutical Association to be held in Milwaukee, Wis.: Lucius E. Sayre, Class 1866, Philadelphia, Pa., *Chairman*; Albert E. Ebert, Class 1864, Chicago, Ill.; Adam Conrath, Class 1873, Milwaukee, Wis.; Bartholomew Bantly, Class 1874, Milwaukee, Wis.; Daniel R. Jones, Class 1883, Milwaukee, Wis.

Please notify them of their appointment, and also that the Committee have power to fill any vacancies among the number.

Also, please call the next meeting of the Executive Board for 4.30 P. M., August 7th, 1884, at Belmont, Fairmount Park.

Yours, very truly,
CHAS. A. WEIDEMANN, *President.*

On motion, the communication was ordered filed.

The Secretary stated that he had notified the above gentlemen who were appointed as delegates, and that they all accepted the appointment.

The following bills were presented and read, and, on motion of C. Carroll Meyer, they were ordered to be paid, viz.:—

To Burk & McFetridge, for printing 3000 copies of the Twentieth Annual Report,	$468 00	
for 1,200 large envelopes, special to order,	10 00	
for 100 two-cent envelopes and printing,	3 50	
		$481 50
To H. C. Ambler, for 2½ days' hire of horse and carriage, at $4 per day, for distributing Reports,		10 00
To Wm. E. Krewson, for expense for distributing Twentieth Annual Report in city,	$2 96	
for 1,000 four-cent stamps,	40 00	
for postage and stationery,	3 60	
		46 56
Total,		$538 06

The Secretary stated that it would be necessary to appoint the usual Committee on Quizzes, and suggested that the President, Secretary and Treasurer be a standing Committee on Alumni Quizzes.

Mr. C. Carroll Meyer moved that hereafter the President, Secretary and Treasurer of the Alumni Association be the standing Committee on Quizzes from year to year. So ordered.

The Secretary moved that the Committee on Twentieth Anniversary and Excursion receive a vote of thanks, which was duly seconded and carried.

The Secretary reported that he had officially notified Messrs. Louis Genois, J. W. Worthington, and Clement B. Lowe of their appointment as a Committee on Deceased Members, and they had all accepted.

Also, that the President had appointed Messrs. Wm. N. Stem and Chas. W. Warrington as the balance of the Committee on the Reed Case, and that he had notified them and that they had accepted. The Committee as now appointed is as follows: Henry W. Newbold, West Philadelphia, Pa.; Henry P. Thorn, Medford, N. J.; Wm. R. Laird, Jersey City, N. J.; Wm. N. Stem, Philadelphia, Pa.; Chas. W. Warrington, Philadelphia, Pa.

The Secretary reported the following applications for membership since the last meeting of the Board, viz.:

James T. Shinn, Class 1854, Broad and Spruce Sts., Phila.
John W. Ranck, M. D., Class 1865, No. 3922 Germantown Avenue, Phila.
T. Elwood Conard, M. D., Class 1871, Seventh and Brown Sts., Phila.
Thos. L. Buckman, Class 1874, Chestnut Hill, Pa.
Patrick M. Kelly, M. D., Class 1879, Twentieth and Ellsworth Sts.
Geo. W. Goldsmith, Class 1882, No. 1311 N. Broad St.
Chas. Thos. Wm. Cress, Class 1884, Butte City, Montana.

The Secretary reported that the above gentlemen had paid the necessary fee, and were therefore members of this Association.

The following communication was read:

Peoria Public Library,
Peoria, Ills., May 24, 1884.

DEAR SIR:—We have the Seventeenth Annual Report; would be pleased to receive as complete a set as possible, also any other publications which you can spare, which we will bind and place in the library.

Yours, respectfully,
FRED'K J. SOLDAN, *Librarian.*

The Secretary stated that he had complied with this request and had sent a full set of the Reports. On motion the action of the Secretary was sustained.

The Secretary read a communication from W. F. Coulter, manager of *The National Druggist*, requesting a copy of our last Report, also wishing to have the reports of the meetings and transactions of the Association from time to time, for which they would send us a copy of their journal regularly. The Secretary stated that he had received the July number of *The National Druggist*, also the Sixty-third Annual Report of the Mercantile Library Association of the City of New York, 1884, 34 pages; also a communication from Mrs. Sarah B. Stratton, widow of our deceased member, James Stratton, thanking the Association for sending her the Report containing the obituary of her late husband.

The Secretary reported that he had received but seven photographs of the Class of 1884.

The Secretary reported the following deaths, notice of which he had received since the last meeting of the Board, viz.:—

John Goodyear, Class of 1837. Died at his late residence, Seventeenth and Pine streets, on Sunday, June 15th, 1884, aged 71 years.

Ambrose Smith, Class of 1834, of Philadelphia. Died at the residence of his brother-in-law, at Darlington, Harford county, Md., Tuesday, July 15th, 1884.

Philip L. Milleman, Class of 1866. Died at his home in Chicago, Ill., May 8th, 1884, aged 44 years.

Frank Conrath, M. D., Class of 1875. Died of acute consumption, at his home in Milwaukee, Wis., May 15th, 1884, aged 33 years.

Joseph Trimble; of the Class of 1834, of Philadelphia. Died at his late residence, No. 212 North Thirty-third street, West Philadelphia, on Wednesday, July 30th, 1884, aged 70 years.

The Secretary stated that he would hand over the names and whatever information he had procured in reference to the deceased to the Committee on Deceased Members.

The Secretary moved that a Committee of Five be appointed upon Social Meeting for the Course of 1884–5. So ordered.

The President appointed the following as the Committee: Dr. A. W. Miller, Chairman; Lucius E. Sayre, John E. Cook, C. Carroll Meyer, and Jos. W. England.

The President appointed the following as the Committee to attend the Introductory lecture on Wednesday evening, October 1st, 1884: Henry Trimble and David W. Ross.

There being no further business, on motion of the Secretary, the Executive Board adjourned.

Attest, WM. E. KREWSON, *Secretary.*

MINUTES OF THE THIRD REGULAR MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 North Tenth Street,
November 6, 1884.

The third regular stated meeting of the Executive Board was held this afternoon in the library room of the College.

The meeting was called to order at five minutes past 4 o'clock P. M., by the President, Dr. Chas. A. Weidemann.

The roll was called, and the following members were present: President, Dr. Chas. A. Weidemann; Treasurer, Edward C. Jones; Secretary, Wm. E. Krewson; Corresponding Secretary, David W. Ross; Executive Committee, Henry Trimble, Lucius E. Sayre, Wallace Procter, and Jos. W. England.

A communication was received from Jacob S. Beetem, First Vice-President, regretting his inability of being present. Wm. R. Warner, Jr., Thos. H. Potts, C. Carroll Meyer and Thos. S. Wiegand, were also noted as being absent.

The minutes of the last meeting were read and approved.

The Committee of Two appointed at the last meeting of the Board to attend the introductory lecture of the opening of the sixty-fourth course of the college reported through the Chairman, Mr. Henry Trimble that Prof. J. M. Maisch delivered the introductory lecture to a large audience composed of students and former graduates of pharmacy. His subject was on vegetable physiology, and was very interesting.

On motion of the Secretary the report was received and the committee was discharged.

The Secretary reported that he had notified all the members of the Committee on Social Meetings of their appointment, and that they had all written their acceptance.

The first social meeting was held on the 14th of October, with an audience of 90 persons. Dr. Carl Seiler delivered an interesting lecture on "Hay Fever, and its Treatment." Mr. L. E. Sayre, chairman of the delegation appointed to attend the thirty second meeting of the American Pharmaceutical Association, held at Milwaukee, Wis., August 26th to 29th, 1884, made a very interesting report. The next, or second social meeting, will be held next Tuesday, November 11th, when Dr. R. D. Jones, Ph. G., will deliver a lecture entitled "Marvellous Tricks of the Hindoo Fakirs," and Mr. L. F. Gordon will read an essay on "How to Think."

The Secretary reported that the Committee on Quizzes had conferred together and appointed Messrs. Lucius E. Sayre and Louis Genois as the Quiz Masters for the Senior Quiz Class, and Mr. John E. Cook as Quiz Master for the Juniors, and that they each had accepted the positions upon the same terms as in previous years.

The Junior Quiz Class was duly organized on Tuesday, October 9th, and that it now numbers 28 members.

The Senior Quiz Class was also organized upon the same day, and that Class numbers over 50. Quite a large number of students made application, who were unable to attend the Thursday afternoon Quiz; and the Committee, after consultation with the Quiz Masters, deemed it advisable to organize a second Quiz Class to meet on Wednesday afternoon from 5 to 7 P. M.; this Class numbers about 25 students. The attendance thus far in the two Classes has been 82, about two-thirds of which have taken out their tickets.

The Class in Microscopy has not been very successful thus far; but 11 students have made application.

The following bills were presented after being approved by the President and Secretary:—

	Burk & McFetridge—		
Aug. 20th, 1884.	1,000 Applications,	$5 00	
	500 Acknowledgments,	2 50	
Sept. 24th, 1884.	1,000 Microscopy Circulars,	5 50	
" "	1,000 Quiz Circulars,	5 50	
Sept. 30th, 1884.	100 2-cent Envelopes,	3 25	
" "	1,000 1-cent "	14 00	
Oct. 3d, 1884.	2 Books, 50 tickets each, for Junior Quiz,	3 00	
Oct. 4th, 1884.	1,200 Letter Circulars for first Social Meeting,	6 50	$45 25
	H. B. Crane—		
Oct. 8th.	1½ size Show-card,	75	
	1 small "	25	1 00
	Wm. Mann—		
Oct. 16, 1884.	1 Quart Stafford's Ink,		45
	Dr. C. R. Morgan—		
Oct. 15th, 1884.	Reporting first Social Meeting,		5 00
	Wm. E. Krewson, Secretary—		
Nov. 6th.	Postage, Stationery and Incidentals,		8 87

Mr. Wallace Procter moved that the bills be paid. So ordered.

The Secretary read the following communication:—

PHILADELPHIA, Oct. 13th, 1884.

Wm. E. Krewson, Secretary Alumni Association, Philadelphia, Pa.:—

DEAR SIR:—Herewith we hand you Vol. II of *The Druggists' Journal*, and trust it may be found useful and acceptable as a work of reference, and may occupy a position in your archives.

Very respectfully yours,

GEO. A. FREY & Co.

The Secretary moved that the gift be accepted, and that a vote of thanks be extended to the publishers for the same. So ordered.

The Secretary read a communication from Dr. Wm. W. Van Buren, requesting a copy of the Constitution and By-Laws of the Association.

The Secretary stated that he had sent a copy of the Eighteenth Annual Report to Dr. Van Buren, which contained the Constitution. On motion, the communication was ordered filed and the action of the Secretary sustained.

The Secretary read a communication from Chas. J. V. Fries, Ph. G., Class of 1883, of Anoka, Minn., and a member of the Association, stating that he had lost his certificate of membership by fire, which had consumed his employer's store, on the morning of August 16th, 1884. He desired the Association to forward him a new one in place of the one destroyed.

The Secretary stated that the custom was, upon proof of the loss of a certificate, to furnish the persons with a duplicate for $2.50, and that he had informed Mr. Fries of this rule, and that Mr. Fries had forwarded the required fee, and that the certificate had been made out and signed by the officers of 1882–3, and sent to Mr. Fries, who had acknowledged the receipt of the same.

Mr. Wallace Procter moved that the communication be filed, and that the action of the Secretary be sustained. So ordered.

The Secretary reported that he had notified the Zeta Phi Society of the action of the Executive Board in requesting the Zeta Phi Society to elect a Class Historian, and that he had received the following communication, which was read as follows:—

PHILADELPHIA, PA., Oct. 25th, 1884.

Wm. E. Krewson, Secretary of Alumni Association :—

DEAR SIR:—At a meeting of the Zeta Phi Society, held October 24th, Mr. A. B. Hammond, of Baltimore, Md., was elected as Class Historian.

Yours, fraternally,
WILL F. HARPER,
Secretary of Zeta Phi Society.

On motion, the communication was filed.

The Secretary stated that he had received the following communication from Edward Hopper, Esq., Class of 1833, who was elected at the last annual meeting as Orator for 1885, which was read as follows:—

NO. 323 WALNUT ST., PHILA., Oct. 10th, 1884.

MY DEAR SIR:—I am deeply sensible of the compliment extended to me by the Alumni Association, but find that it will not be in my power to comply with the request to deliver the Oration.

I am very respectfully, etc.,
EDWARD HOPPER.

To MR. WM. E. KREWSON, *Secretary.*

The Secretary moved that the communication be filed, and that the declination be accepted, and that the Board proceed to fill the vacancy for Orator. So ordered.

Mr. Wallace Procter offered the following:—

Resolved, That Mr. A. E. Ebert be elected as Orator for the next Annual Reception of the Association, and that the President, Secretary and Treasurer be appointed a committee to acquaint him of his selection, and to appoint an Orator in case of his declination.

The Secretary moved the adoption of the resolution, which was duly seconded and carried.

The Secretary stated that he had received from the Chicago Drug and Chemical Co. a memento, in the shape of a medal, of the Thirty-second Annual Meeting of the American Pharmaceutical Association, held at Milwaukee in August last.

The Secretary read the following requests for back numbers of the Alumni Reports, viz.:—

Mellen Chamberlain, Librarian of Boston Public Library, 12th, 13th, 15th and 19th Annual Reports.

Robert Fletcher, Acting-Assistant Surgeon, U. S. A., and Assistant Librarian S. G. O., Washington, D. C., the 15th Annual Report (1879), to complete the set.

C. C. Williams, Librarian of Massachusetts College of Pharmacy, the 2d to 16th (inclusive) Annual Reports; also acknowledging the receipt of the same.

C. B. Tillinghast, Acting Librarian of State Library of Massachusetts, the 1st to the 15th (inclusive); also a communication, under date of October 4th, 1884, thanking the Association for the gift.

Will S. Jones, Secretary of the Alumni Association, Pittsburgh College of Pharmacy, requesting the last Annual Report.

The Secretary stated that he had complied with all the above requests, and had sent the numbers asked for.

On motion, the action of the Secretary was sustained.

The Secretary reported that he had received the following acknowledgments from libraries and institutions who had received the 20th or last Annual Report, viz.:—

Department of the Interior, Bureau of Education, Washington, D. C., John Eaton, Commissioner of Education.

Library of U. S. Congress, Washington, D. C., A. R. Spofford, Librarian of Congress.

Surgeon-General's Office, U. S. Army, Washington, D. C., Robert Fletcher, Acting Assistant Surgeon U. S. A., and Assistant Librarian, Surgeon-General's Office.

The Smithsonian Institution, Washington, D. C., Spencer F. Baird, Secretary Smithsonian Institution.

College of Physicians of Philadelphia, Pa., James H. Hutchinson, Honorary Librarian.

Franklin Institute, Philadelphia, Pa., E. Hiltebrand, Secretary and Librarian.

The Astor Library, New York, Frederick Launders, Librarian.

Long Island Historical Society, Brooklyn, N. Y., George Hannah, Librarian.

Library University of Vermont, Burlington, Vt., J. E. Goodrich, Librarian.

Yale College Library, New Haven, Conn., A. Von Name, Librarian.

The Library of Trinity College, Hartford, Conn., J. H. Barbour, Librarian.

Public School Library, St. Louis, Mo., Fred'k M. Crunden, Librarian.

Apprentices' Library, Fifth and Arch streets, Philadelphia, Pa., Isaac Morgan, Librarian.

State Library of Massachusetts, Boston, Mass., C. B. Tillinghast, Acting Librarian.

Massachusetts College of Pharmacy, C. C. Williams, Librarian.

Alumni Association, Pittsburgh College of Pharmacy, Will S. Jones, Secretary.

British Museum, London, England, Edward A. Bond, Principal Librarian.

Académie Royale de Médecine de Belgique, Bruxelles, M. Craniux, President; M. Rommelaere, Secretary.

Also from the Peoria Public Library, J. S. Lee, President, and Fred'k J. Soldan, Librarian, acknowledging the receipt of the full set of our Reports, as per request in last Board minutes.

Massachusetts State Pharmaceutical Association, Lynn, Mass., J. W. Colcord, Secretary.

Kentucky State Pharmaceutical Association, Harrodsburgh, Ky., Jas. T. Cook, Secretary.

Kansas State Library, Topeka, Kansas, H. J. Dennis, State Librarian.

Iowa State Library, Des Moines, Iowa, Mrs. S. B. Maxwell, State Librarian.

Pennsylvania State Library, Harrisburg, Pa., C. J. Little, State Librarian.

The Mercantile Library Association, New York City, W. T. Peoples, Librarian.

The Secretary stated that he had received the following Reports of State Pharmaceutical Associations, viz.: Pennsylvania, J. A. Miller, Secretary, Harrisburg, Pa., Proceedings 1884. New Jersey, R. H. Vansant, Secretary, Trenton, N. J., Proceedings 1884. New York, Clay W. Holmes, Secretary, Elmira, N. Y., Proceedings 1884. Kentucky, Jas. T. Cook, Secretary, Harrodsburg, Ky., Proceedings 1882, '83 and '84. Massachusetts, J. W. Colcord, Secretary, Lynn, Mass., full set of Proceedings 1882, '83 and '84.

The following applications for membership were received and read:

Willis A. B. Hoke, Class 1881, of Martinsburg, Va.

Ernest W. Hermann, Class 1876, No. 716 Race st., Philadelphia, Pa.

F. W. E. Stedem, Class of 1882, N. W. cor. Broad st. and Fairmount ave., Philadelphia, Pa.

The Secretary stated that the above named persons had paid the necessary fee and had received their Certificates of Membership, and were therefore active members of the Association.

The Secretary stated that he had received a communication from Sarah B. Ellis, requesting four copies of the Nineteenth Annual Report, 1883, which contained the obituary of Wm. Ellis, and that he had sent her the copies and had received an acknowledgment for the same.

The Secretary stated that he had received the *National Druggist* of St. Louis, Mo., containing a full report of the first social meeting of the Alumni, October 14, 1884.

The Secretary reported the following deaths since our last meeting:

C. W. Frank Moore, Class of 1877, joined the Association September 14, 1882, died at his home, North-East, Md., on Tuesday, July 15, 1884, of brain fever, aged 29 years.

Edward L. Jefferson, Class of 1873, joined the Association April 2, 1873, died at Atlanta, Ga., August 17, 1884, from an overdose of morphine, taken to relieve uremic convulsions.

Caleb H. Needles, Class of 1841, died at his residence south-west cor. Twelfth and Race streets, on Friday, October 10, 1884, of Bright's disease, aged 64 years. Joined the Association January, 1866.

The Secretary stated that all the information that he had received would be handed over to the Committee on Deceased Members, who would present the proper obituaries for the Annual Meeting.

The Secretary stated that Mr. A. P. Brown, the Instructor in Microscopy, had requested him to ask the Board to purchase a microscope with the polariscope, as it was necessary to have one in order to give the proper instruction to the Class in Microscopy.

Mr. L. E. Sayre moved that Mr. A. P. Brown be authorized to purchase a new microscope with the polariscope. So ordered.

The Secretary stated that it would be necessary to have Certificates of Membership engraved or printed before the Annual Meeting, as the supply was almost exhausted.

Mr. Wallace Procter moved that the Secretary and Treasurer be appointed a Committee to purchase five hundred Certificates. So ordered.

Mr. Joseph W. England moved that the Secretary be authorized to prepare and have published the Twenty-first Annual Report for 1885, and to procure as many advertisements as possible to assist in defraying the expense of the same. So ordered.

Mr. Wallace Procter moved that the Quiz Masters be paid the amount guaranteed by the Committee on Quizzes, January 1, 1885, and the balance which may be due them at the close of the Course. So ordered.

On motion of the Secretary the meeting of the Executive Board adjourned.

Attest, WM. E. KREWSON, *Secretary.*

MINUTES OF THE FOURTH REGULAR MEETING OF THE EXECUTIVE BOARD.

Hall of the Philadelphia College of Pharmacy,
No. 145 N. 10th Street,
February 5th, 1885.

The Fourth Regular Meeting of the Executive Board of the Alumni Association was held in the library room of the College this afternoon.

The meeting was called to order by the President, Dr. Chas. A. Weidemann, at 4 o'clock, P. M.

The roll was called, and the following members were present: President, Dr. Chas. A. Weidemann; First Vice-President, Jacob S. Beetem; Second Vice-President, Wm. R. Warner, Jr.; Secretary, Wm. E. Krewson; Corresponding Secretary, David W. Ross; Treasurer, Edward C. Jones; Executive Board, Henry Trimble, Lucius E. Sayre and Jos. W. England.

A communication was received from C. Carroll Meyer, regretting his inability of being present. The Secretary also stated that Mr. Thos. H. Potts was unable to be present.

The minutes of the last meeting were read and approved.

The report of the Secretary on Quizzes was then read as follows:—

PHILADELPHIA, PA., Feb. 5th, 1885.

To the Members of the Executive Board of the
Alumni Association of the Philadelphia College of Pharmacy.

GENTLEMEN:—Your Secretary would respectfully report that the Junior and Senior Quiz Classes for 1884 and 1885 were very successful this year, both financially and in numbers.

The Committee on Quizzes appointed Mr. John E. Cooke, Ph. G., to conduct the Junior Quiz (Mr. Henry Trimble, Ph. G., having declined on account of other duties). The Class was organized Thursday afternoon, October 9th, 1884, and has met every Thursday afternoon during the College Course. Twenty-nine (29) Junior students took out tickets and became members of the Class. The amount received for the sale of tickets is $145.00.

The committee appointed Mr. L. E. Sayre, Ph. G., and Mr. L. Genois, Ph. G., to conduct the Senior Quiz.

At the commencement of the course it was found that a large number of the Senior students could not avail themselves of the Thursday afternoon Quiz; and, after consulting with the Quiz Masters, it was deemed advisable, in order to accommodate the students, to form a second Class, to meet on Wednesday afternoon from 5 to 7 o'clock. This Class was organized October 15th, 1884, and has met each Wednesday evening during the course, and numbered 24 students.

The Class meeting every Thursday afternoon from 3.30 to 5.15, was organized on October 9, 1884, and numbered 59 students, making a total of 83 Seniors who availed themselves of the Alumni Quizzes, and upon their graduation will be entitled to Certificates and active membership in the Association, according to our former resolution governing Quizzes.

The amount received from the sale of Senior Quiz Tickets is $821.00. One of the Seniors who took the Alumni Quizzes last year, and who was already eligible to membership upon graduation, desired to take the Quizzes again this year, and Committee put the ticket in such cases at $6.00.

The total amount received from the sale of the Senior and Junior Quiz Tickets is $966. The cost of printing circulars and Quiz Tickets amounted to $9.50, and Senior Quiz Masters each receive $207.50, and the Junior Quiz Master $87, making a total cost of $511.50, leaving a net gain to the Association of $454.50. The Committee also purchased a National Dispensatory (Stillé and Maisch) for the use of the Quiz Masters, at a cost of $6.40.

The Class in Microscopy was duly organized October 24, 1884, under the supervision of Mr. A. P. Brown, Ph. G., as instructor, but 11 of the students availed themselves of this important branch of instruction. Four of the members of the Class were from the Senior Class and six from the Junior Class, and one who will be a member of the Junior Class next year.

The amount received from this Class for tickets is $110, and from the sale of Microscopical accessories $4.70, making a total of $114.70. The cost of printing was $5.50, and the instructor received $55.00, making a total of $60.50, leaving a balance to the Association of $54.20, clear of all expenses.

By direction of the Executive Board, the Instructor purchased an Acme, No. 4, Microscope with Polariscope, which cost $61.65.

The Social Meetings during this winter have been a success. Four of the series of the course of five have been held on the second Tuesday of each month, with a large attendance of members and students. The last one of the course will be held next Tuesday, the 10th inst., of which circulars have already been distributed.

The cost of printing and postage on account of Social Meetings, this term, is $52.95. Notices of these Social Meetings have been sent to each resident member of the Association, and the Junior and Senior students have each received a notice in the form of a circular.

Respectfully submitted,
Wm. E. Krewson, *S cretary.*

On motion of Mr. D. W. Ross, the Report was accepted and ordered to be spread upon the minutes.

The Report of the Instructor in Microscopy was then read, as follows:

Camden, N. J., January 31st, 1885.

To the Officers of the Alumni Association
of the Philadelphia College of Pharmacy:

The Fifth Course in Microscopy has just been completed and the Instructor begs leave to report that eleven students availed themselves of the opportunity of learning to use the microscope, and at the close of the course they all expressed themselves highly gratified with the instructions received. A larger number would have attended the course had they had the opportunity; but the students' time is so much occupied with other branches that they cannot spare the time to attend this course. Therefore I would recommend that the Association offer to the students the opportunity of attending a Spring course, by organizing a Class about April 1st, 1885. A number of students have asked for that opportunity, and probably a number may apply so as to make it an object for the Association to organize such a Class. The Instructor begs leave to report that all the microscopes are in good condition, and that this is one of the first things taught, namely, the care of the microscope; all of which is respectfully submitted.

ALBERT P. BROWN, *Instructor.*

On motion of the Secretary the report was accepted and ordered spread upon the minutes.

The Secretary stated that in accordance with the resolution of Mr. Procter, at the last meeting of the Board, he had written to Mr. Albert E. Ebert, informing him of his election as Orator at the Alumni Reception, in March next, and had received the following communication, viz.:—

CHICAGO, ILL., November 17th, 1884.

Wm. E. Krewson, Secretary of the Alumni Association,
Philadelphia College of Pharmacy:

MY DEAR SIR:—I am in receipt of your esteemed communication apprising me of the action of the Executive Board in selecting me as Orator for 1885. This I exceedingly regret, as circumstances are likely to arise, which will prevent my being able to perform this, not only pleasant but distinguished duty, that I owe to my Alma Mater at the time set. For this reason, and no other I must beg you to excuse me for this occasion, hoping that I may be able to fill the honorable position at some future time.

Thanking the Board and your Committee for the honor and remembrance, I remain Yours truly, ALBERT E. EBERT.

On motion the above letter was ordered spread upon the minutes.

The Secretary stated that, in accordance with the same resolution, the committee which was appointed to secure an Orator in case of the declining of Mr. Ebert, had written to other members of the Association, but had received no replies; and finally the committee had selected Dr. Frank E. Stewart, Ph. G., Class of 1876, and the Secretary had notified Dr. Stewart of his selection, and that he had received the following reply, which, on motion, was ordered spread upon the minutes, viz.:—

PHILADELPHIA, PA., Jan. 26th, 1885.

Wm. E. Krewson, Ph. G., Secretary of Alumni Association, P. C. P.:—

DEAR SIR:—Your esteemed favor informing me of my appointment by the President as Orator for 1885, was handed me on my return from New York just now, and I hasten to reply. It gives me great pleasure to serve the cause of pharmacy in any way, and particularly the institution so dear to us all. I therefore accept the honor that has been conferred upon me, hoping to do justice to the Association and your committee, of whom I am the choice. With much respect, I am very truly yours,

F. E. STEWART.

The Secretary stated that, in accordance of a resolution of this Board at the May meeting, the President and Secretary were requested to communicate with the Board of Trustees of the College in reference to having the museum opened each day for the use of the students. A communication was sent to the Trustees November 1st, 1884, and the Secretary of the Board of Trustees had sent the following reply, viz.:—

PHILADELPHIA, Nov. 5th, 1885.

Wm. E. Krewson, Ph. G., Secretary Alumni Association :—

DEAR SIR :—In reply to your letter of September 1st, I am directed by the Board of Trustees to say that, with the facilities at present afforded to students, it does not seem necessary to grant the request contained therein.

Yours very truly,

WM. C. BAKES, *Secretary.*

On motion the communication was ordered spread upon the minutes.

The Secretary read the following communication from the Secretary of the Zeta Phi Society :—

PHILADELPHIA, Dec. 29th, 1884.

Mr. Wm. E. Krewson, Secretary of Alumni Association, P. C. P. :—

DEAR SIR :—At a meeting of the Zeta Phi Society, held December 12th, Mr. Elmer B. Kyle, of York, Pa., was elected Class Prophet, to deliver an address, in connection with that of the Class Historian, at the Alumni Reception. I should have done this sooner, but, in the excitement attendant upon holiday times, I have neglected it until now. Hoping you will excuse the delay,

I remain yours fraternally,

WILL F. HARPER,

Secretary Zeta Phi Society, P. C. P.

On motion the communication was ordered filed, and the name of Mr. Kyle was put upon the programme for the Reception, to make an address as Class Prophet.

The Secretary stated that Mr. Chas. C. Ramey, of Norristown, Pa., had been elected Class Orator, although he had not as yet received any official communication from the Secretary of the Zeta Phi Society.

The Secretary read a communication from Mr. W. C. Bakes, Secretary of the Board of Trustees, under date of November 16th, 1884, saying that the Annual Commencement would be held on Tuesday, March 24th, 1885, at the Academy of Music.

The Secretary moved that the annual meeting of the Alumni Association be held in the Alumni room on Friday, March 20th, 1885, at 2 o'clock, P. M.; and that the Annual Reception be held on the evening of the same day (Friday, March 20th), at 7.30 o'clock, P. M. So ordered.

Mr. Jones spoke about holding the Reception in the museum, or in the Academy of Fine Arts, and not, as heretofore, in the lecture-room. After considerable discussion, participated in by all the members present, some favoring the Academy of Fine Arts, which would cost the Association at least $25.00; besides, it would be taking it away from the College, where it had always been held. Some of the members thought the museum too small to accommodate those who would be present.

The Secretary moved, that the Reception be held in the First Lecture Room of the College, and that the Committee be authorized to spend a sum not exceeding $15.00 for decorations. So ordered.

On motion, the President, Treasurer and Secretary were appointed a Committee on Reception.

The Secretary moved, that the President appoint four members of the Association as ushers, upon the evening of the Reception, in order that the audience might be properly seated. So ordered.

The Secretary stated that at the last meeting of the Board, the Treasurer and Secretary were appointed a committee to have 500 Membership Certificates engraved. The committee received estimates from Lehman & Bolton, and from Burk & McFetridge. The contract was awarded to Messrs Burk & McFetridge, they making the best offer. Five hundred copies for $50, or one thousand for $65, and as the difference in cost was so small the committee thought it advisable to have one thousand engraved, and the Secretary produced the proof of the Certificate, which was satisfactory to the Board, and, on motion, the report of the committee was accepted.

The Secretary stated that the President had received a communication from R. C. Davis, Librarian of the University of Michigan, at Ann Arbor, Mich., requesting the following back numbers of the Alumni Reports to complete the full set, viz.: First, Second, Third, Fourth, Sixth, Seventh, Eighth, Tenth, Twelfth, Fourteenth, Fifteenth, Sixteenth and Nineteenth.

The Secretary stated that he had complied with the request, and had sent the numbers desired, and received an acknowledgment from the President and Librarian.

The following acknowledgments were read from those Institutions who had received the last Annual Report.

From the Council of the Pharmaceutical Society No. 17, Bloomsbury Square, London, England, Elias Bremridge, Secretary.

Nederlandsche Maatschappij Ter Bevordering Der Pharmacie, Amsterdam, Jacobus Pola, Secretary.

Weekly Drug News and Price Current, 72 William Street, New York City, N. Y.

The following bills amounting to $696.75 were presented, after being approved by the President and Secretary, viz.:

Burk & McFetridge—			
November 1st, 1884,	To 1000 circulars 2d Social Meeting,	$ 4 50	
22d, 1884,	" 1000 1c. Envelopes and Printing,	14 00	
28th, 1884,	" 1200 Circulars, 3d Social Meeting,	4 50	
January 6th, 1885,	" 1200 Circulars, 4th Social Meeting,	4 50	
29th, 1855,	" 1200 Circulars, 5th Social Meeting,	4 50	
29th, 1885,	" 300 Note Circulars (requesting photographs,)	2 00	
29th, 1885,	" 300 Blank Contracts for adv.	1 50	$35 50
C. R. Morgan—			
Nov., Dec. and Jan.,	To Reporting 2d, 3d and 4th Social Meeting @ $5 00, ...		15 00
J. B. Lippincott & Co.—			
November 12th, 1884,	To 1 National Dispensatory, . .		6 40
Jas. W. Queen & Co.—			
November 15th, 1884,	To 1 Acme No. 4 Microscope,	$55 00	
	" 1 Polariscope (Selemite best)	13 50	
		$68 50	
	Less 10 per cent.,	6 85	61 65
John E. Cook—			
January 27th, 1885,	For Quizzing 29 Junior students @ 3 00,		87 00

Albert P. Brown—	
January 31st, 1885, For Instruction to 11 Students in Microscopy @ 5 00, . .	$55 00
T. S. Wiegand, Trustee of Sinking Fund—	
January 31st, 1885, To 1 Gold Medal, . . .	17 00
Lewis Genois—	
February 4th, 1885, For Conducting Senior Quiz in Chemistry, 83 Students @ 2 50	207 50
Lucius E. Sayre—	
February 5th, 1885, For Conducting Senior Quiz in Materia Medica, 83 Students @ 2 50, ...	207 50
Wm. E. Krewson, Secretary—	
February 5th, 1885, For Postage and Incidentals,	4 20

On motion the above bills were ordered to be paid.

The Secretary announced the following deaths, viz:

John L. Williams, (Rev.) Class of 1874, was killed by being thrown out of his carriage at Bloomfield, Perry county, Pa., September 4th, 1884.

Curtis Jacob Bollman, Class of 1884, died at his home in Mansfield, Ohio, November 15th, 1884, of typhoid fever, aged 23 years.

Robt. F. Finck, Class of 1884, died at the residence of his parents, 1120 Girard street, Philadelphia, Pa., December 1st, 1884, aged 26 years.

John A. Witmer, Class of 1876, died on the train in going from Denver, Col. to Los Vegas, New Mexico, of consumption, December 30th, 1884, aged 29 years. Mr. Witmer was Corresponding Secretary of the Association in 1883–4.

The Secretary stated that he had given the above names to the Obituary Committee, who would report them more fully at the Annual Meeting.

The following application for membership was read:—

Wm. B. Gleim, Class 1883, Philadelphia Hospital.

The Secretary stated that the applicant had paid the necessary fee.

The Secretary stated that one of the Senior Students had presented a set of botanical specimens, in competition for the prize offered by the Association in 1878.

On motion of the Secretary, the specimens were referred to a committee of three, consisting of the President, Dr. C. A. Weidemann, Prof. John E. Cook, and E. C. Jones, to examine, and if, in their judgment, they came up to the requirements, to present the award to the candidate at the annual reception in March.

The Secretary moved that the Instructor in Microscopy, Mr. A. P. Brown, be asked to organize a spring class in microscopy about April 1st, 1885, and that the Secretary issue circulars to the Junior students and resident graduates, giving them the required information. So ordered.

Mr. Jacob S. Beetem offered the following resolution, viz.:—

Resolved, That the name Valedictorian be changed to Class Orator, and that the subject Valedictory Address be changed to The Annual Class Oration.

The resolution was duly seconded and adopted.

Mr. Edward C. Jones offered the following amendment to the By-Laws, viz.:—

ARTICLE IV.

ON NOMINATIONS.

Sec. 1. The President shall, during the month of November of each year, appoint a committee of at least thirteen, of which he and the Secretary shall be members, no two of whom shall be from the same Class. Said committee shall report to the Executive Board at their meeting in February. and the Secretary shall send the list out in the circular notice of the annual meeting.

Sec. 2. *No* nomination will be received at the annual meeting unless it be by unanimous consent.

Sec. 3. Any active member of the Association can propose any candidate or list of them to the Nominating Committee, and they will be considered by the committee and can be scheduled by them to the Executive Board and placed upon circular of annual meeting if the committee shall deem it desirable.

Make present Article IV Article V.
Make present Article V Article VI.

The President stated that action on the proposed amendment would take place at the annual meeting.

It was moved and seconded that the Secretary be authorized to have the Certificates of Membership filled up for the members of the Senior Quiz Class who successfully pass the final examination and graduate at the coming Commencement. So ordered.

There being no other business, on motion of the Secretary, the Board adjourned.

Attest, Wm. E. Krewson, *Secretary.*

List of those who have acted as Secretaries since the organization:—

Hiram Gold	Class 1864	1864–65
Wm. C. Bakes	" 1855	1865–68
Clemmons Parrish	" 1868	1868–72
Wm. McIntyre	" 1863	1872–74
Edwin C. Boring	" 1867	1874–75
Allen Shryock	" 1868	1875–76
Wallace Procter	" 1872	1876–78
Wm. W. Moorhead, M. D	" 1869	1878–79
F. Marion Murray, M. D.	" 1876	1879–80
Wm. E. Krewson	" 1869	1880–86

List of Treasurers:—

Richard M. Shoemaker	Class 1862	1864–66
Alfred Miller	" 1863	1866–67
S. Mason McCollin, M. D	" 1864	1867–68
Edward C. Jones	" 1864	1868–86

Minutes of the Social Meetings,

1884-1885.

FIRST SOCIAL MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 N. 10th Street,
Tuesday afternoon, Oct. 14, 1884.

The first Social Meeting of the Alumni Association for the course of 1884–85, was held this afternoon in the Museum of the College, with an attendance of ninety members, students and friends of the Alumni Association.

In the absence of the President and Vice-President, Mr. Lucius E. Sayre, of the Committee, called the meeting to order, at 3.20 P. M., with a few appropriate remarks, congratulating the Association upon the success of the Social Meetings in former years, and urged the co-operation of the students, and others present, in maintaining the Social Meetings during the present course. He also called the attention of the students to the Quiz Classes and the Class in Microscopy, all of which are under the auspices of the Alumni Association.

He then introduced Dr. Carl Seiler, who delivered an interesting and instructive lecture on "Hay Fever and its Treatment," which was illustrated by diagrams, models and instruments. The lecture was listened to with marked attention by the audience, and was highly appreciated, as was demonstrated by the applause he received upon its conclusion.

Dr. A. W. Miller remarked that as the lecture had proved so highly instructive and entertaining, probably it would be well to have some discussion upon the topic.

Rev. R. B. Westbrook remarked, that he had the misfortune to be a sufferer from Hay Fever for a quarter of a century, and had been very favorably impressed with the lecture, and had faith in the suggestions made by the speaker, in his experience he had found a palliative for the most stubborn attack of the disease in the Turkish and Russian baths.

Dr. Seiler replied that the bath would also mitigate a cold in the head, and that inflammation draws the blood to the spot affected, and by acting on the skin, as the Turkish bath does, the pores are opened and the blood is drawn away and caused to circulate more freely in the skin, and thus the congestion or inflammation is relieved, but in order to be relieved for any length of time it is necessary to repeat the baths, for if omitted for twenty-four hours you will feel the same effects again ; but for a cold in the head as a rule one bath is sufficient.

Dr. Miller stated that the nostrum known as Wei De Meyer's Catarrh Cure was based almost solely, if not entirely upon the use of Bi-carbonate of Sodium.

Dr. Miller stated that we were favored with the presence of Miss F. Lizzie Peirce, the Principal of Mount Vernon Institute of Elocution and Languages, who has kindly promised to give a selection, and moved that she be invited to give the selection, which was agreed to.

Miss F. Lizzie Peirce then recited "The Rescue," which was highly appreciated by those present.

Mr. Sayre then invited Dr. A. W. Miller to take the chair, and he read the report as chairman of the delegation appointed by the Alumni Association to attend the Sessions of the American Pharmaceutical Association, held at Milwaukee, Wis., which was very interesting, and the account of the trip, to and from Milwaukee, together with the observations of the chairman during his sojourn, made the report not only instructive but entertaining.

On motion of Dr. Miller, a vote of thanks was tendered to Dr. Seiler for the able and instructive lecture, which was unanimously given.

Dr. Miller also moved that a vote of thanks be given to Mr. Sayre for his highly interesting report, which was duly seconded; and the Secretary, upon putting the motion, it was unanimously carried.

Miss Louise Lorenz then gave a selection called "Burdock's Goat," which was received with applause; and, upon being encored, she recited another humorous piece.

Dr. Miller exhibited a specimen of copper ore, or malachite, which he had obtained during a visit in the West, which was passed around for inspection, together with the specimen of the white alkaloid of hydrastis made by Prof. F. B. Power, and the transparent crystals of hydrastine made by J. U. Lloyd, July, 1884.

The President *pro tem.* called the attention of the students present to the Alumni Query-Box, which would be found in the Actuary's room. Any student who desired to ask a question on his studies or the lectures could write the same upon paper and deposit it in this box, and at the Social Meetings these would be examined and answers given. He presented the following, which was found in the box this afternoon, viz.: "What is the best method of extracting drugs, regardless of the Pharmacopœal process?"

After remarks, the question was modified to read as follows: "What is the best method of extracting resins," and was referred for dicussion to the next meeting.

Miss F. Lizzie Peirce then recited a selection entitled "The Irrepressible Boy," which was received with great applause.

The Secretary moved that a vote of thanks be tendered Miss Peirce and Miss Lorenz for their entertaining recitations, which was unanimously given.

The Chair then called attention to the next (second) Social Meeting, which would be held in this room on the second Tuesday in November (Nov. 11th, 1884,) at 3 o'clock, and invited all those present this afternoon to be present upon that occasion.

On motion the meeting adjourned.

Attest, WM. E. KREWSON, *Secretary.*

SECOND SOCIAL MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 N. 10th Street,
Tuesday afternoon, Nov. 11th, 1884.

The Second Social Meeting of the Alumni Association was held this afternoon in the Museum of the College with one hundred and thirteen persons present.

The meeting was called to order by the President, Dr. Chas. A. Weidemann, at 3.15 o'clock, P. M.

The minutes of the First Social Meeting were read.

The President then announced that the first thing on the programme this afternoon would be a lecture by Dr. Roland D. Jones, Ph. G., entitled "Marvelous Tricks of the Hindoo Fakirs," and requested Dr. A. W. Miller to introduce the lecturer.

Dr. Miller then introduced Dr. R. D. Jones with a few appropriate remarks, saying that he had consented to favor the Alumni with a lecture on the "Marvelous Tricks of the Hindoo Fakirs," which he had occasion to observe in his visit to the east. He visited India where he had abundant opportunity to take note of the tricks of the Fakirs, some of which would seem to be incredible were they not related by a gentleman of the known reliability of Dr. Jones.

Dr. Jones then delivered an interesting lecture upon the above subject, which was listened to throughout with marked attention by the audience.

Rev. Dr. Westbrook, after the conclusion of the lecture, desired to know whether Dr. Jones had any theory regarding these wondrous tricks as performed by the Fakirs, or had any explanation to make of the way they are done.

Dr. Jones replied that the question was one that no one could answer, as over one thousand people in India had tried to find out how these things were done, and yet it was impossible to detect them in any particular.

Dr. Miller stated that it might prove of interest to those present to hear the particular circumstances under which these tricks were performed.

Dr. Jones stated that there was a Commission appointed by the British Government to investigate these tricks and that he was invited to accompany them. The Commission was in India about eleven months and that they were even more puzzled than ever at the expiration of that time.

Rev. Dr. Westbrook stated that he had no theory of his own on this subject, but that while living in New York he became acquainted with the notorious Madame Lavatzky, who is now in India at the head of the Philosophical Society. From her theory in regard to these wonderful things he got his impression that there are two classes of these workers in India. One class are ranked with the common jugglers and are known to be tricksters; the other class are cleanly and practice great self-denial studying the laws of nature, and their tricks are classified as scientific feats.

Mr. J. W. Redpath asked the object of these tricks and whether it was for the purpose of making money that these tricks were performed.

Dr. Jones replied that in some cases it is for making money, but in the tricks which he had observed it was to satisfy the English Commission and was not done for money; in fact it didn't cost the Commission any money from the time they went out there until they left. These Fakirs were above the ordinary Hindoo and were men who had private fortunes, traveling in their own country.

Miss Mabel D. Garns, a graduate of the Mount Vernon Institute of Elocution, and who received the first prize at the Commencement last June, recited a selection entitled "Jamie," which was well rendered, and upon being loudly encored recited "Ike after the Opera," which was likewise appreciated by the audience.

The President then introduced Mr. L. F. Gordon, who read a highly interesting essay on "How we Think," which was listened attentively to by those present.

Dr. Miller moved that a vote of thanks be tendered to Dr. Jones and Mr. Gordon for the able manner in which they had instructed and entertained the meeting this afternoon. The motion was seconded and unanimously carried.

Dr. A. W. Miller, Chairman of the Committee on Social Meetings, announced that Dr. J. M. Anders would deliver a lecture on "Diet and Drink," at the next Social Meeting of the Course in December.

Dr. Miller stated that the most of us would remember Dr. Anders as having given us a lecture last winter upon a Botanical subject, which was very instructive, and therefore he felt assured that his next lecture would be as highly instructive and interesting.

The President then called upon Miss Mamie Woodward, also from the Mount Vernon Institute of Elocution, who affectively rendered "Aunt Jemima's Courtship," which was received with great applause, and upon being encored recited another piece entitled "A freckled-faced little girl: How she entertained a missionary while her mother was dressing."

The President announced that the Query Box was found to be empty, but the subject as announced for discussion was "What is the best method of extracting Resins?"

Mr. L. E. Sayre stated that it should be "Resinous Drugs," not "Resins," but did not think that the subject was capable of very much discussion, and in its place would like to introduce another subject for a few moments, that of "Hydro-chlorate of Cocaine."

Mr. Sayre stated that we hear some remarkable stories about this new alkaloid in the daily papers, in regard to its effect in blunting the susceptibility to pain of the mucous membrane.

Dr. Miller stated that the article was very difficult to obtain, and when these experiments were first made, there were just two drachms of it in the United States, one in Boston and one in New York. They have been consumed but more is on the way. A firm in this city has sent a cable dispatch for one ounce of the alkaloid, since that time this firm has discovered a substitute for it, which solution combined with chloric acid will relieve pain.

Dr. Jones remarked that he strongly suspected that a substance having the same action can be obtained from what is known as artichoke. In the lower part of Delaware they have used this article. They take the artichoke and roast it, and then put it on the spot where they intend to deaden the pain.

Dr. Miller moved, that a vote of thanks be tendered to the ladies who so kindly favored us this afternoon with the recitations, and coupled the motion with the request that Miss Garns favor the audience with a selection entitled "A Naughty Little Girl." The motion was unanimously carried.

Miss Garns then recited the selection, and at its conclusion received hearty applause.

The President then announced that the next, or Third Social Meeting would be held in this room on Tuesday afternoon, December 9, 1884, when Dr. Anders would deliver the lecture, "Diet and Drink," and hoped that all present would be able to attend the meeting, which he had no doubt would be very entertaining.

On motion of Mr. Sayre, the meeting adjourned.

Attest, WM. E. KREWSON, *Secretary.*

THIRD SOCIAL MEETING.

Hall of the Philadelphia College of Pharmacy,
145 N. 10th Street,
Tuesday afternoon, Dec. 9th, 1884.

The Third Social Meeting of the Alumni Association was held this afternoon in the Museum of the College, with one hundred and thirty persons present.

The meeting was called to order by the President, Dr. Chas. A. Weidemann, at 3 o'clock, P. M.

The Secretary read the minutes of the previous meeting, which were approved.

The President then introduced Dr. J. M. Anders, the lecturer of the afternoon, who gave a very interesting lecture on "Diet and Drink," which was listened to attentively by the audience.

Dr. Miller stated that the lecture was full of valuable suggestions, and he thought a considerable amount of time might be taken up in considering these various points.

A discussion then took place upon the nutritive principle of the various forms of starch, as contained in arrow-root, corn-starch, tapioca, etc., which was participated in by Dr. Anders, Dr. Miller, Mr. Wm. McIntyre, Rev. Dr. Westbrook and Dr. R. D. Jones.

Rev Dr. Westbrook stated that he could heartily endorse the valuable and eloquent lecture, and that there was one point which he desired to merely suggest a thought upon, which was fish diet, and perhaps some of the gentlemen in the audience might profitably investigate. The question is, Why does the Catholic Church allow the use of fish on Friday, and prohibit the use of animal food? He further stated that there was an answer to to this question, both historical and physiological, and if any one was unable to solve it he would give them an answer upon applying to him, and the answer would be found to be simply a physiological one; and perhaps at some of the future meetings of the Association he might answer the question, together with some others of a similar character.

Dr. Miller suggested that Dr. Westbrook read an article upon that subject at the February meeting, and requested the Secretary to make a note of the fact.

The President stated that the next subject on the programme was a paper by Mr. L. E. Sayre on the new alkaloid and anæsthetic "Hydrochlorate of Cocaine," and further stated that the Secretary had received a communication from Mr. Sayre saying that, owing to illness in his family, he was unable to be present this afternoon, and that he would read the paper at the January meeting.

The President then called upon Miss Sallie A. Gesemyer, a graduate of the Mount Vernon Institute of Elocution, to give us a selection. Miss Gesemyer then recited a selection entitled "Carl," which was highly enjoyed by those present; and, upon being encored, read a selection entitled "Mosquitoes," which was well rendered, and produced a great deal of mirth.

Dr. Miller then announced that at the January meeting Prof. John E. Cook would deliver a lecture on the subject, "How to Experiment in Natural Philosophy," and Dr. Edward T. Bruen would give some remarks upon the "Germ Theory of Diseases."

Dr. Miller stated that, in lieu of the paper which was to have been read by Mr. Sayre this afternoon, he would read a paper entitled "What is the best way to wait on a Customer?" which was written by Mary Brewer, and received the first prize offered about two years ago by Mr. John Wanamaker for the best essay upon the above subject.

Dr. Miller then read the essay, and it was listened to attentively by the audience.

Dr. Miller then introduced Miss Willa Armstrong, also of the Mount Vernon Institute of Elocution, who recited a piece entitled "Baby's First Tooth," which was well rendered; and, upon being encored, she read a piece entitled "The Married Man Sewing on a Button," which was quite humorous, and she received great applause.

Dr. Miller moved that a vote of thanks be tendered to Dr. J. M. Anders for his highly interesting lecture, and also to Miss Gesemyer and Miss Armstrong for their recitations, which was duly seconded, and, upon being put, was unanimously carried.

The President then announced that the next (or fourth) Social Meeting would be held on Tuesday afternoon, January 13th, 1885, at 3 o'clock, P. M., and hoped all would be present upon that occasion.

On motion of the Secretary the meeting adjourned.

Attest, WM. E. KREWSON, *Secretary*.

FOURTH SOCIAL MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 N. 10th Street,
Tuesday, January 13, 1885.

The Fourth Social Meeting of the Alumni Association, for the winter of 1884–85, was held this afternoon in the Museum of the College.

The meeting was called to order by the President of the Association, Dr. Chas. A. Weidemann, at 3.30 P. M., with an attendance of 148 members of the Association, students and friends of the Alumni.

The President called for the reading of the minutes of the last meeting.

The Secretary moved, that owing to the lateness of the hour, that the reading of the minutes be dispensed with. The motion was agreed to.

The President then announced that we were favored this afternoon with the presence of Prof. Edward T. Bruen, M. D., of the University of Pennsylvania, who had kindly consented to give us a lecture on "The Germ Theory of Disease," and that it gave him great pleasure to introduce Dr. Bruen to the audience.

Prof. Edward T. Bruen, M. D., then gave an interesting and instructive discourse upon the germ theory of disease, which was listened to very attentively by those present.

Dr. Bruen gave an account of the antiquity and present basis of the germ theory, and different classes of infectious diseases, the theory of vacination and protection by this means, and alluded to the action of antiseptics and disinfectants.

Dr. A. W. Miller suggested that perhaps Dr. Bruen would give his views with regard to the efficiency of Chloride of Lime, Sulphate of Copper, Sulphate of Iron and Permanganate of Potassium. Dr. Bruen stated that most of the disinfectants were antiseptics and that very few of them were capable of absolutely destroying the germs of disease ; fire and certain gases which were irrespirable, were the only reliable germicides.

After considerable discussion, participated in by Dr. Miller, Dr. Bruen and Mr. L. E. Sayre, Dr. A. W. Miller introduced Miss Katie Shriver, one of the pupils of the Mount Vernon Institution of Elocution and Languages, who gave a selection entitled "Archie Dean," which was received with great applause ; upon being encored she rendered another short selection entitled "Helping Things Along."

The President announced that Prof. John E. Cook was the next upon the programme, but that the Secretary had received a communication from Mr. Cook, saying that he was taken suddenly ill this morning and would be unable to be present to deliver the lecture, but would deliver it at the next Social Meeting in February.

The President then called upon Mr. L. E. Sayre, who read a highly interesting paper upon "Cocaine," which was postponed from the last meeting. He gave an interesting history of the Cocoa plant, and stated that the annual yield was more than thirty million pounds.

Dr. Miller then introduced Miss Addie A. Jenkins who recited a selection entitled "Where is Annette," which was received with applause.

Dr. Miller moved, that a vote of thanks be extended to Dr. Bruen for his able lecture, and to the two young ladies for their interesting and entertaining recitations which they have given the Association this afternoon. This motion was duly seconded and carried unanimously.

The President then announced that the last of the series of Social Meetings would be held on Tuesday, February 10th, when Rev. R. B. Westbrook would deliver the lecture, the subject being "The Origin of Some Familiar Things."

Prof. Cook would deliver his lecture on "How to Experiment in Natural Philosophy," and that Miss F. Lizzie Peirce would be present and read, and would also be accompanied by two of her pupils, Miss Mabel D. Garns and Miss Mamie Woodward.

On motion, the meeting adjourned.

Attest, WM. E. KREWSON, *Secretary.*

FIFTH SOCIAL MEETING.

Hall of the Philadelphia College of Pharmacy,
No. 145 N. 10th Street,
Feb. 10th, 1885.

The fifth and last Social Meeting of the Alumni Association for the session of 1884 and 1885 was held in the Museum of the College this afternoon, with ninety-five students, visitors and members of the Association present.

In the absence of the President and two Vice-Presidents, the Secretary moved that Mr. C. Carroll Meyer take the chair, which was duly seconded and carried.

Mr. C. C. Meyer then called the meeting to order at 3.30, P. M.

The Secretary then read the minutes of the last meeting, which were approved.

The President *pro tem.* requested Dr. A. W. Miller to introduce R. B. Westbrook, D. D., which he did with a few appropriate remarks.

Dr. Westbrook delivered a very interesting lecture, entitled "The Origin of some Familiar Things." The lecture was highly interesting and instructive, and was attentively listened to by the audience.

He commenced by saying his lecture would be like the apothecary who had a bottle in which he was in the habit of throwing the rinsings of his bottles and measures, and had it labelled "All sorts."

He spoke of the letter ℞ which is used by physicians in writing prescriptions, giving its origin and definition. Also, the origin and history of the barbers' pole, the three balls of the pawnbroker, and the Zodiac.

Miss Mabel D. Garns then rendered a piece entitled "The Jiners," which produced much mirth; and, upon being encored, recited "Charity Grinder and the Postmaster," which was likewise appreciated.

Prof. John E. Cook, Ph. G., then came forward and delivered a lecture on "How to Experiment in Natural Philosophy," which was very instructive.

Dr. Miller stated that Miss Mamie Woodward, who was to have given a recitation this afternoon, was detained at home by sickness, but Miss Willa Armstrong would recite in her stead, which she did, and her recitation was enjoyed by those present.

The President *pro tem.* then read the following query, viz.:—

"From recent researches, it appears that chlorophyl (the remarkable substance to which the vegetable world owes the color of its foliage) is made up of two coloring matters—a green and a yellow, the relative proportions being one hundred of the first to one of the second. Both have been lately obtained in the crystalline state."—*Phila. Record,* Saturday, Nov. 22, 1884. What can be said as regards this?

Mr. J. E. Cook, Ph. G., then read an interesting paper upon the above query (chlorophyl.)

Dr. Miller stated that in the absence of the President, Dr. C. A. Weidemann, he thought it proper to announce that this meeting closed the series of Social Meetings for this course, and he thought that the thanks of the Association were due to the audience for their attendance during the winter, and for the interest that had been taken by the students and others. He further stated that the Social Meetings would be continued next fall, and we had already the promise from Dr. S. D. Risley, of the University of Pennsylvania, who would deliver a lecture on "Mydriatus."

Miss F. Lizzie Peirce then recited a piece entitled "Creed of the Bells," which was well rendered; and, upon being encored, she again recited, to the enjoyment of those present.

Dr. Miller moved that a vote of thanks be extended to Dr. Westbrook, Prof. Cook and Miss Peirce and her pupils for the part they had taken in the afternoon's enjoyments. The motion was seconded, and unanimously carried.

Mr. C. C. Meyer then thanked the audience for their attendance this afternoon, and in the name of the President he would thank the Committee on Social Meetings, and particularly the Chairman, Dr. Miller, who had so zealously labored for the success of the meetings during the winter.

Mr. Chas. W. Hancock moved that the meeting adjourn. So ordered.

Attest,

Wm. E. Krewson, *Secretary.*

PRELIMINARY REMARKS

OF

LUCIUS E. SAYRE.

At the opening of the First Social Meeting of the Alumni Association, held Tuesday afternoon, October 14th, 1884, in the Museum of the College.

Mr. Lucius E. Sayre, Ph. G., opened the meeting and said:

Gentlemen of the Alumni of the College of Pharmacy, in the absence of the President (Dr. Weidemann), who is unfortunately sick and now at Atlantic City, I have taken his place to greet you at this time.

We are again assembled as an Association, and it is our purpose to promote social intercourse between the members of the organization composed of graduates and students whom we expect and hope will become also graduates and members of the Alumni.

We again, with a great deal of pleasure, refer to the success of similar meetings in past years, and we have every reason to expect still greater success in those which are at hand. We would remind students at present that the success of these meetings are largely dependent upon them, and we trust that they will at least lend us their presence, with possibly their active co-operation and aid in eliciting and enlisting the interest of those friends whom we wish to invite.

We would call attention at this time to the work of the Alumni, and hope the students will, so far as is possible for them, take advantage of the opportunities presented by the Association in their quizzes, junior and senior. Also, we would make a special mention of the class in microscopy.

Explanatory circulars of these classes have been already distributed. The Secretary, Mr. Wm. E. Krewson, and any of the officers will be ready at any time to give information concerning them.

This afternoon we have with us a gentleman whose face is familiar to the Alumni. We have met him here before, and he has been over and over again thanked by this Association for his generous presence and his valuable contributions to us, Dr. Carl Seiler will give us a lecture on hay-fever and its treatment.

HAY-FEVER AND ITS TREATMENT.

An address delivered by Dr. Carl Seiler, at the First Social Meeting, held Tuesday, October 14th, 1884.

LADIES AND GENTLEMEN:

The subject of hay-fever is certainly one which must arouse an interest in all of you, for I do not believe that there is one among you who has not seen a case of hay-fever, or who has not himself perhaps suffered from the disease in a more or less aggravated form.

Hay-fever is that mysterious, peculiar, unaccountable catching of cold, which occurs at various periods of the year, especially in the summer time. We notice that there are in America two kinds of this hay-fever, namely, the so-called rose-cold, which occurs at the end of May and beginning of June, and lasts generally from three to four weeks, and then disappears; and the other kind, the more serious, more harassing in its symptoms—this real hay-fever, which occurs about the 20th or 21st of August, and lasts, as a rule, until the frost makes its appearance.

For a long time very little was known about this disease, in fact very little was itself said about it, and it is only in 1819 that we have the first description of the disease given by Dr. Rastock, of London, who, himself, suffered from the disease.

He first described it as a periodical affection of the eyes and chest. Then, in 1828, after having made further observations on this disease, he called it the autumnal catarrh, but said very little about it, except describing the symptoms.

In 1839, and you see there is a long distance between 1819 and 1839, Eliston, also an Englishman, gave a description of it in his book on the practice of medicine, and pointed out the pollen grains as the cause of the disease.

Between the years 1839 and 1869 many papers were written on the disease, its symptoms and treatment, by various authors, which accredited the cause of the disease to the emanations of plants. In 1869 Professor Helmholtz, a well-known and celebrated phycicist and physiologist, who, himself, is a sufferer from the disease, claimed to have discovered the true cause of hay-fever, and proclaimed it to be animalculæ, which could be killed by solutions of quinine. Consequently, he at once wrote a treatise on hay-fever and its treatment, and gave as a specific solutions of quinine, to be injected into the nose at various intervals and of various strengths.

I may say here that I saw Prof. Helmholtz in the year 1871 suffering very severely from hay-fever, and that his quinine did not do him any good, nor others who since then have used quinine as a remedy by means of injections found very much benefit, in any from that application.

In 1872, Moril Wyman first pointed out two distinct forms which I have already enumerated, viz.: hay-fever and rose-cold, as existing in America, while in England nothing is known of the so-called rose-cold.

Blakely in 1873 demonstrated by a number of experiments that the sole cause of the disease was the pollen grains of flowers and grasses. He made experiments upon his person, by subjecting himself to the emanations of various plants, and found that certain plants would give him an attack of hay-fever while others would not.

In the same way similar experiments were made by Saulsbury of Cleveland, now of New York, and his follower and scholar Dr. Ephraim Cutter, who finally claimed to have discovered a peculiar kind of seed in the excretions of the nose of a patient suffering from Hay Fever. He also claimed to have discovered the same thing in nasal catarrh.

In 1876 Dr. Beard of New York, wrote a book on hay-fever, in which he also names pollen as the cause of the disease. He says that the affection occurs chiefly in persons of a nervous temperament of considerable education. It is a very curious fact that among almost all hay-fever sufferers, we find very few of the lowly station. Sex and race seem to have some influence upon the disease, as very few cases of hay-fever are found among negroes or among the Indians. Very few cases of hay-fever are found among the inhabitants of the Southern countries. The further south the geographical distribution the fewer are the cases, so that in the equator nothing is known of the disease, the further north up to a certain degree, the more of hay-fever.

Now, if the emanations of plants were the sole causes, where the vegetation is the greatest there should be the greatest amount of hay-fever. And yet we find just the contrary. We find it in the temperate zone and in the colder climates more frequently than in the warmer zones.

Sex, as I said before, has also a great influence. There are more men than women affected by the disease. This may be due to the fact that women, especially in America, are particularly careful to keep out of the sun, and are particular to protect themselves against dust of any kind by wearing veils; also by keeping in doors during the heat of the day, and therefore fewer women probably on that account suffer from the disease than men. Yet these rules are by no means universal. The Anglo-Saxon race, that is the English, are more liable than other nations; yet I can lay my hands now on five Germans who are annually attacked by hay-fever, and I also know of negroes who are similarly affected.

Social standing also seems to have an effect. That is to say there are few of a lowly station, and yet at the same time I saw to-day a bricklayer, and last week I saw a man who is a laborer, who are sufferers and have been for the last twenty-five or thirty years from hay-fever.

So that the rule is by no means a universal one. To finish off the historical sketch, which, of course, must be a very short one, I will state that since 1882, Daly of Pittsburgh, Roe of New York, Allen of Philadelphia, Hauck of Germany, and others, have published papers in which they claim that the diseased condition of the nasal mucous membrane is the cause of the affection.

Now let us explain this. There have been a large array of authors, who all claim that pollen grain is the cause, while others come who say it is not the pollen grain, it is the diseased condition of the mucous membrane.

These two facts stare us in the face—these two conditions. But let us look at the matter a little more closely. If we scan the literature on the subject, we find that there are authors who claim that the pollen grains are the cause of the disease. What treatment do they give? They simply give the treatment to remove from one locality to another. They say, for instance, one hay-fever sufferer goes down to Beach Haven, and is free from it, and another goes down there and he is just as bad as he is in Philadelphia, while if he goes up in the mountainous regions he is free from it, while the one who is free from it at Beach Haven if he were to go up in the mountains he would suffer as much as if he were at home. How is that to be accounted for? Simply by idiosyncracy. They say that is the peculiar susceptibility of certain persons to be affected by certain substances. You are familiar with instances of the kind. Idiosyncracy is a peculiar susceptibility of the system to be affected by certain substances. I have in mind an instance of this kind in which a lady is affected by buckwheat. As soon as buckwheat is brought near her, even without her knowledge, she is attacked with a severe fit of sneezing followed by catarrhal symptoms, lasting from two to twenty-four hours. I tried the experiment with her, having had occasion to cross the ocean in her company. In mid-ocean I had the steward bring in the buckwheat cakes a little sooner than usual. She was sitting with her back to the steward, and before he had gone about six feet into the saloon, this lady began to sneeze, and at once said the buckwheat cakes have come into the saloon and I have to go. She at once disappeared on deck, and in that way escaped a severe attack of hay-fever, or if you will, buckwheat-fever, or anything you like to call it.

I know of another instance in which a young lady could never ride behind horses. She was never able to go anywheres near a horse, not even within six feet of one, without being attacked with severe sneezing and asthma.

This is an idiosyncracy of a horse. Call it horse-cold if you like, but certainly not hay-cold.

These authors all simply advise removal from one place to another—that is to say, escape from the particular pollen grain by which the patients are irritated, and give the assurance that, with the advent of frost, all symptoms will disappear.

Now, gentlemen, that is not so, because there are many hay-fever sufferers whose attacks continue with more or less severity through the whole year, having an exascerbation or increase at the time when the hay-fever appears in others, but they suffer from the disease all the year round. In fact, this very afternoon, as I was coming here, I met a friend from Pottsville, who told me he had had a case last year of a lady who had died from hay-fever—that is, not directly, she was not choked to death; but in her case for twenty-five years the hay-fever had persisted through the whole year, and had lowered her vitality, and her body was so enfeebled that she simply succumbed under one of the attacks—could not bear up under it, in other words.

That is, then, the treatment which these authors all give us. Now, let us see what the other authors advise in the way of treatment, Roe, Hauck, Allen and Daly, of Pittsburgh, and I might name myself along with the rest, although I forebore to publish anything that had already been published. In order to do so, I must call your attention a little to the anatomy of the nose, because otherwise you would not understand it. I have here a diagram which gives you simply an outline of the nasal cavity, together with the throat and mouth.

You notice that the nasal cavity is covered by mucous membrane. That this mucous membrane is thrown over projections called turbinated bones—curtain-like projections of bone. Between this mucous membrane and those bones there is a spongy substance called cavernous tissue. It is composed of large caverns filled with venous blood directly supplied from the arteries.

Then here is what is called the vestibule. This is studded with hair, and it serves to filter the coarser particles of dust which float in the air. Away back here is the opening of the ear, running into the inner ear and forming an outlet, so as to supply the inner ear with fresh air, which occurs during every act of deglutition. Right here is an opening which leads up into the eye, and forms what is called the lachrymal duct, through which the tears find their way down, and you well know that if a person cries they have to blow their nose. It is a very good means of determining whether any one cries crocodile tears or not. If he does cry crocodile tears he will not blow his nose. I have often noticed it at funerals. (Applause.) Genuine tears will always make you blow your nose, provided this duct is open. If the duct is closed, which may occur, and frequently does occur, the tears will constantly run over the cheek, and in winter time will produce a sore. Besides this nasal cavity there are other cavities which communicate with the nose and when filled cause pain in the head. These are called the frontal sinuses, a hole right in the forehead, right over the eye-brows, and where phrenologists locate some kind of bump. It is right over a hole—it is not over the brain. Then there are the sphenoidal cells, situated in the sphenoidal bone, away back, which cavity is not shown here. Situated right in the cheek is what is called the antrum. And all those other cavities communicate by tubes directly with the nasal cavity, and are also lined with mucous membrane. Now, then, as a matter of course, a large number of nerves are supplied to this mucous membrane. These nerves of the special sense of smell are particularly supplied to the upper portion of the nose, right here (indicating), and also the sensitive nerves are supplied. For instance, you may run a probe very readily into the nose without any difficulty whatever, and away down till it touches the throat (illustrating). You see it does not give me any inconvenience in the slightest, but let me turn it upward and I will begin to sneeze at once. Therefore, the sensitive portion of the nose is situated higher up than the non-sensitive, and it is curious, well, I need not say it is curious. It is a very convenient and a very comfortable provision of nature that this should be so. Because the lower portion of the nose is the largest—the throat, that lower portion (indicating) consequently we breathe freely. If this portion was the most sensitive, why we would be sneezing all the time on going out into the dust, for the dust would irritate. On the other hand, if also the nerves of the sense of smell were situated in that portion, it would be a trial to go into a drug store, because the smells abounding there would be so concentrated, that they would be intolerable, while the nerves of the sense of smell being situated high up, inaccessible, away from the current, a very small portion of the odorous substance reaches those nerves, and gives rise to the sense of smell.

Now having explained all this, we will see how an inflammation will affect the nose, abstracting from the idea of hay-fever, we will simply see what an inflammation will do.

Suppose that we have an irritation or an inflammation there. This inflammation will naturally swell up the mucous membrane, and it will swell up these venous sinouses, that spongy tissue, and the result will be pressure upon the nerves, and there will be a tendency for that inflammation to spread, and it may travel up into the eye, and it may give us inflammation of the eye.

I have seen men with a cold in the head, and they generally have a bloodshot eye. Or it may travel up into the frontal sinus, and what will be the result then? Intense headache over the eyes; or it may travel into the sphenoidal cells, and there will also be a headache, it will be diffused. Frequently patients come to see me, and say, "Doctor, I have a headache." "What kind of a headache have you got?" "My head feels as though filled with jelly; every time I step that jelly knocks against my brain." A very common expression for describing the pain of a cold in the head. I know at once that this portion, this cavity, is invaded, because it lies immediately underneath the brain, separated from it by a very small partition. A sensation of motion of the water surrounding the brain is communicated to this small bridge of bone, and it is communicated to that inflamed surface of the nerves and produces that peculiar pain they describe.

Sometimes they describe it as though their head was filled with cotton. Then, again, that inflammation may travel into the antrum, the antrum being immediately above the upper teeth. In fact, some of the teeth project into the cavity, and toothache or jawache, which you so frequently find associated with cold in the head, make their appearance. Or if inflammation travels up the Eustachian tube, you have stopped-up ears, the roaring noise, and the peculiar feeling of something being in the ear, and patients will very often work their ears this way (indicating), trying to open them up. It is simply caused by inflammation and by swelling in this portion.

Now, how does such inflammation occur? Such an inflammation may occur from cold in the head, chilling of the surface, driving the blood all to one part, and causing inflammation there. But it may also be caused by localized irritation. If that localized inflammation lasts for any length of time it will spread, and if that localized inflammation is frequently repeated, it will give rise to permanent swellings. So that we may have a permanent swelling right here, but not as big as my thumb, closing up that whole nostril. Fresh air cannot even penetrate through that nostril, and the consequence is that the mucous membrane of the nose, in exercising its natural functions, becomes deranged, the glands by which mucus is produced are excited and we have symptoms of immediate nasal catarrh. On the other hand, this may occur in front here, and we have anterior hypertrophies, as I have described it to you when I lectured to you on the subject of nasal catarrh; but let, for instance, one particular spot be simply more irritable than another, for instance, when it will be found in the skin that we have certain portions of the skin more sensitive than other portions. The eye, for instance, is an extremely sensitive portion. The slightest touch will cause redness and inflammation. Now suppose there exists in the nose one or more spots which are sensitive to the touch of anything, and particularly so to a particular kind of dust, spots of that kind will then be excited and will cause inflammation, which will travel through all these cavities, throughout all the nasal cavities, by the simple irritation of that dust. If the nerves having been supplied to that spot, or to that nasal cavity in general, have been irritated for a very long time, a change in their function or in their general character takes place, and they finally become perverted, and, it is said, so that they will respond to some irritants and will not respond to others. For instance, I can liken that to the fact that some persons have a perverted sense of smell; and I know of one person who tells me that violets always smell to him like garlic; everything else he smells is all right, except violets; he has a perverted smell in that particular violet smell. Or take the well-known phenomena, color-blindness. A person who calls green red, and red green; he cannot tell the two apart—that is, he mixes them up. Now, he is not color-blind in any other color except red and green; so that his nerves are perverted in that particular sensation of red and green. Now, if you like to call that an idiosyncracy, you can do so, but that is the explanation of it. It is a perverted sensibility of the nervous system, or of any particular nerve.

Now we have instances where we have such a spot in the nose which is perverted, and is at once caused to swell up and become irritated and inflamed as soon as buckwheat touches it. We may simply call it buckwheat blind, if we use the color-blind simile. The sense of smell is simply perverted for that particular buckwheat, and for nothing else, and in that way we may explain, and we can explain the action or the causation of hay-fever. For it has been found beyond any doubt by observers that I have named to you—the American observers that in cases of hay-fever exist peculiar spots on the mucous membrane, which may or may not be recognizable by the naked eye, which, when irritated by any kind of dust, will cause hay-fever. But they can also be caused to give off the sensation of hay-fever and produce an attack of hay-fever by being irritated mechanically, of course very much more strongly than by dust. For instance, by touching them with an instrument, so that in this way they can be detected, The patient feels a pain, a peculiar sensation, which hay-fever patients feel at the beginning of an attack, as if ants were crawling up in the nose. Then the sneezing begins, and then simple hay-fever, lasting for one to twenty-four hours, from the mere touching of the instrument upon that one spot.

Not infrequently we also find that hay-fever is associated with nasal catarrh. Those obstructions which I have shown you, and which I will simply bring back to your mind again, by means of this diagram which I have here. I have a number of diagrams which you have seen before, some of them or all of them. The first is a diagram showing the front of the nose where the nostrils both are obstructed here (indicating) by a bony projection from the bridge of the nose, and here by a projection in the nostril itself, pretty high up, so high up that it ordinarily cannot be seen. The hay-fever spot may be situated right behind that, high up, and yet you cannot see it on account of this large swelling which extends over it. The swelling therefore has got to be removed first. Then again the swellings may be situated further back, as in this case. Here we have the swelling further back, causing, as I said before, a closure of the nasal cavity, and preventing the air from passing in that way, preventing the manifestation of nervous insensibility; and here, by means of a section, is shown the situation of the trouble.

Now, you will glance for a moment at the manner in which this is done, and how these spots are found; how they are reached. You know well enough the nose is a cavity which reaches from before backward, and is rather small and narrow, and it is a matter of difficulty to gain access to it. It requires, therefore, a strong light, which we obtain by means of what is known as a "head reflector." This is placed upon the head in this situation, and the light is got either from the sun, or if the sun is not obtainable, from a gas-lamp or candle, and is thrown upon the patient's face. The nostril is then enlarged by means of a pair of nippers or pincers, which are called "the nasal dilator." This is introduced into the nostril closed by pressing it together, and then it is allowed to spring open, and the nostril is thus opened so that a beam of light can be thrown into it. But as a rule, it is better to use what is called a "speculunar." This is nothing but a little funnel made of rubber, flattened, made a little smaller at the end, which is introduced and can be worked in pretty high up, and in that way the beam of light is more concentrated, it is carried further off, so to say, it is telescoped.

into the nose, and the interior of the nose can be seen very readily in this way, more so than with the dilator.

But, gentlemen, as a rule, it is necessary also to examine the posterior portion, or the back portion, of the nose; and as we cannot see higher up than about the middle of the nose, namely up to about here (indicating) from in front, we have to examine the other end in another way, and we do this by placing a small looking-glass right behind the soft palate, throw a strong light upon that, reflect the light upward, and at the same time see the illuminated picture in that small looking-glass. In that way we can examine the whole interior portion of the nose, both before and behind. As a rule, the ordinary light—I say as a rule—the ordinary light from the candle or gas-lamp is quite sufficient.

But when we come to look for hay-fever spots that is not sufficient, for the simple reason that the light is always more or less yellow, which color does not differentiate the very delicate shade, which distinguishes hay-fever spots from the rest of the mucous, and, of course, makes it extremely difficult to see them. We can only see them by the differentiation of color, therefore it is advisable to have a stronger light, and at the same time a milder light and a whiter light. We can obtain this by means of the electric light; I have here a little apparatus which I devised for this purpose about a year ago, and have used it ever since with great satisfaction. You might call it an electric laryngoscope, which is attached to the head mirror. It has a small incandescent lamp, as you see, and between it and the mirror itself is a small lens, which enables us to get a better focus; in this way you can concentrate the focus. In the case of an examination of the nose you want a focus which is very small and very concentrated, and we simply turn this lens around and instead of allowing the light from the lamp to fall through it upon the mirror, we allow the light of the reflector to fall through the lens, and we get in that way a short focus, which we can utilize. We get in that way a very much stronger light, which does not burn like the sunlight, and which is not yellow like the gaslight. I will now light this instrument with the current of the battery and you will see the brilliant light it throws out. These examinations are all conducted in a dark room, and the light does not show to so good an effect in this room where we have sunlight. You see that I can have a very powerful and strong light upon my hand here, which will enable me to see any difference of color in the mucous membrane high up in the nose. I put this upon my head and conduct my examination exactly in the same way as though I was using the other apparatus. It is not at all inconvenient to the patient, and I can wear this for hours at a time without the slightest inconvenience. If I want a longer focus for examining the throat, I simply turn my lens around and the light is brought directly upon the mirror, then I have a long focus.

I can see these delicate shades of color which differentiate the hay-fever parts from the other parts of the mucous membrane, and can make the light even brighter by adding another cell to the battery. This mica shield is placed in front of the light so as to prevent it from striking directly upon the patient's eyes, which would be rather inconvenient to him.

Having found, then, these hay-fever spots, how are we going to get rid of them? You see from what I have said, if you have paid close attention, if there was no sensitive spot in the nose, there would be no hay-fever, if there was no sensitive spot in the nose, the pollen of this, that or the other plant, or this, that or the other dust, could not possibly produce an irritation which causes the hay-fever. Therefore, all we have to do is to get rid of those hay-fever spots, as I call them. How to do it is easy enough, but when is it to be done? All we have to do is to take a knife, or pair of scissors, and take a pair of pincers and take out the hay-fever spot from the mucous membrane—snip it off. Unfortunately, the entrance to the nasal cavity is so small that we cannot get in with a pair of pincers or a pair of scissors; and even if we did we could not operate, because we could not see what we were doing, the pincers stopping up the cavity. Consequently, we must have the nose in the best possible condition—that is to say, it must be open as much as possible. Therefore, it is evident that the time for destroying these spots is not during an attack, because then the inflammation is spread from the spot all over the mucous membrane; and it would be in this case almost impossible to distinguish one from another, the inflammation swelling everything, and, again, the nose being so sensitive that you cannot get in.

I will now tell you first what to do in case you have hay-fever, and then what to do to avoid an attack when it is coming on. You can almost find that out for yourself now, since what I have told you is correct, namely, that if there is a sensitive spot in the nose it is irritated by pollen dust or any other kind of dust, and all we have to do is to exclude that dust, and we will be free from hay-fever. How shall we do that? By simply taking a little piece of surgical sponge and moistening it with a little glycerine and water and stuffing it into the nostrils and wearing it there. You can breathe through it with a very great deal of ease—in fact, you get used to it quickly, so that in the course of six hours you hardly know that you have the sponge in your nose; and by this means you exclude all pollen grains and everything that can possibly get in, because they will either not pass through the meshes of the sponge, or they will be caught up by the glycerine and water in the sponge itself. As a matter of fact, when the sponge is used it will absorb some of the secretions of the nose, and it will have to be washed out frequently. Sometimes it is requisite to wash it out every two hours. It can be used and washed out and put in again. After a while it can be worn for twenty-four hours, then for two or three days; but it is better to wash it out every night. By the use of this sponge, we allay the irritation which causes the inflammation. You will know that an inflammation of the mucous membrane can be soothed by a mild alkali. If you burn your fingers with hot steam, you immediately plunge them into bi-carbonate of soda—you stick your fingers right in. Very good. Do the same thing with the nose; make a solution of the bi-carbonate of soda and use it with warm water, and simply snuff it up the nose three or four times a day. Wash out the nose at the same time, and thus soothe the irritated surface, and then put the sponge back again; never use any snuff, or any powder whatever; no matter what you will use, you will aggravate the trouble. Don't use any of the nostrums; they are bad, for the simple reason that they themselves irritate the mucous membrane. They will all have, to a certain extent, an effect, good or bad; but that effect is only evanescent, and will not last. Very soon the secretion will cover the mucous membrane again, and the trouble will still be there. Also, very soon the system becomes accustomed to the snuff, and prevents the thorough impregnation of the mucous membrane, having its peculiar effect upon the circulation in the nose itself.

Now then let us come to the cure. The cure of hay-fever as I said, is very simple. All we have to do is to find the spots and then eradicate them. We can do that. It is like a spot on the skin, like an ulcer, like a sore, we can attack it with nitric acid, or hydro-chloric acid, or acetic acid, or caustic potash, or chromic acid—put it on that spot and burn it out. But the difficulty is that we cannot control the action of these caustics when they are applied high up in the nose, and we are apt to get them smeared all over the inside; instead of burning the sensitive hay-fever spot we burn the whole nose. I have seen very serious results following from an accident of that kind. This has never happened in my own practice, fortunately, but it happened in the practice of a friend of mine. I have seen a man almost die from erysipelas of the face and head caused by the application of chromic acid pretty high up in the nose.

But we have another method which, on account of its applicability to the nose and the smaller cavities of the body, is peculiarly adapted for the treatment of hay-fever, and that is the galvano-caustic method. The galvano-caustic method is a method of heating a piece of platinum wire by means of a strong electric current. You have all been to the Electrical Exhibition, and I have no doubt are well posted up on electrical science, and know exactly why this wire gets hot. But in case you do not know I will tell you. It is a well known fact that an electric current of great quantity, that is to say where we have large plates and a large surface exposed to the acting liquid, is very materially interfered with by transmission through a conductor, say a copper wire for instance, and that the greater the mass of conductor, the less will be the resistance or interference, as it is called. Then there are certain metals which offer more resistance to the current than others. Among other metals is platinum, and it has the advantage also at the same time that it does not melt. If we take a battery and connect two wires and pass a current through them it will meet with very little resistance, but if a piece of platinum wire is placed in the circuit there will be a great deal of resistance offered to the current. What is the result? You know the law that nothing is lost in nature. Energy is not lost. This is energy, and this particular kind of energy is not allowed to flow by that platinum wire. It is simply converted into another energy, namely heat, and consequently that platinum wire gets red hot. Instead of using a piece of wire which we could not pass into the nose, we take this small piece of platinum with its two wires close together near the end and make a loop of platinum around here. You can make it as small as you please, and you can place that anywhere you please and it gets hot. That is the reason why the galvano cautery is the most effective instrument. I will show you the instrument. I have here, you see, a long cord composed of two copper wires. These two copper wires are fastened on to other wires, which run into the handle, and which finally run into this piece covered by an insulated surface. On the end is the thin platinum wire flattened by a hammer. If now, I allow a current to pass through this, you will see that this gets hot, almost white hot. I don't want it to get too hot. The heat is developed by the electric current, but even platinum will yield if the heat is placed beyond a certain point, so it is better not to immerse the plates too deep. The electric current is far better than any other means, and as you see this becomes hot at once, and it can be retained at a uniform heat and according to the way it is wanted. Now I have found, as I have no doubt you all know it is the experience of every country blacksmith, that he can touch a piece of iron that is red hot, but he does not dare to touch a piece of iron that is of a lower temperature. Consequently making use of this homely discovery of the blacksmith, we find that if anything is red hot and it touches the mucous membrane, the nerves are killed almost at once, that is they are stunned by the heat, by the greatness of the heat, consequently very little pain is experienced by touching. At the same time the heat will destroy undoubtedly, as you know, anything that it comes in contact with of a vegetable or animal nature. Consequently if we take our hot platinum loop and run it over, or touch with it, that spot, that hay-fever spot, as I called it before, we will destroy that hay-fever spot, and it will not be irritated any more.

It is, of course, necessary that this should not be too hot, nor should it be too cold. Therefore, it is better to regulate the current. You see I can regulate it from a very white heat to a dull red, and keep it there. If I want a little more heat all I have to do is to press my foot on this lever and expose a little more surface of the zinc plates, which gives a little more electric current. Now, then, if I touch and destroy the hay-fever spot, what will be the immediate result? You might suppose the immediate result will be an attack of hay-fever, just as the attack was brought on from touching the spot with a probe. I told you just now that the nerves were killed, that is these sensitive nerves were killed by the heat; consequently the inflammation does not travel any further and the patient is cured after having been touched by this platinum loop, and without feeling much pain. The pain about equal to the prick of a pin and no more; and in some cases they hardly feel anything at all. It disappears entirely, and the patient walks out and feels perfectly well in every respect. He may have, in twenty-four hours after, a little bit of running at the nose caused by the removal of the eschar, the same as when a blister is removed, but that will be the whole result.

Now, then, there is not only one hay-fever spot in the nose as a rule, but there may be two or more, and the practitioner who wants to cure a case of hay-fever has to spend a good deal of time and a good deal of care and patience in hunting up all the different spots. Having done that, however, you cure your patient. As a rule you can touch two or three at one sitting, so that I never found a case yet could not be cured inside of six or eight sittings. I have had one case in which there was only one hay-fever spot which was touched, and the case was cured. I had another one last summer whom I saw only twice. He was a lieutenant in the army, who had to go out to his post in Kansas. He had always to be relieved during the summer time from duty on account of not being able to ride on horseback in the dusk on the plains. He would take an attack of this kind and would be relieved from duty. He went back after having been burnt twice, and I had a letter from him day before yesterday. He wrote me that his hay-fever had come on at the proper time, namely, on the 20th of August, but, strange to say, had no attack of the inflammation of the eyes, and he had no attack of the asthma at all; but what is still more strange, that his attacks were intermittent—he would have an attack for twenty-four hours and then have a rest for five or six days, and then he would have another attack. He wrote to me that he was satisfied that a few more burnings would finish him, and that he would come on as soon as he could. (Applause.)

There are a great many curiosities about hay-fever, which will go to show that hay-fever is not due to pollen grains; that the pollen grain is simply an exciting cause. For instance, I have under treatment a case of nasal polypus; the patient also had suffered from hay-fever. After the polypi had been removed, his attack of hay-fever did not come on, and it has now been some three years. I had another case in which there was a deviation of the septum; that is, the bridge of the nose had been bent over to one side, so that one nostril was almost entirely closed. In that condition he applied to me. On one side he could blow out the air, but he could not draw anything in for the simple reason that the wing of the nose acted as a valve. This man I operated on four æsthetic reasons—that is, he wanted his nose straightened out, and did not want a crooked nose. He did not say anything about having the hay-fever—never said a word about it. This was about February or March, and he wrote me saying it was strange he had no hay-fever; that he had not had a symptom of it.

On the other hand, I have seen noses which were to all intents and purposes perfectly well—a very rare thing in this climate—and yet their possessors suffered from hay-fever. The other day I saw a small child, only five years old, that had hay-fever, and had had it for three years. In that case there was a considerable amount of catarrh present. I have no doubt that the hay-fever in that small child can be very easily cured.

The number of cases which we find in this country, the peculiarity of the people, the idea that nothing can be done for the hay-fever, conspire to prevent their cure. Their means of cure is, everything to be put into the nose, but nothing to take out. On that account it is very difficult for a new idea to take hold of the people, and it is, therefore, very difficult to convince a patient that he ought to have something done to relieve him of these severe symptoms, because the symptoms, as I have already mentioned, indicate what the trouble is. I know of a case of a lady who has been suffering from the effects of hay-fever for a long time. She is now suffering from hay-fever; it has become chronic, that is to say it runs throughout the whole year, and she is almost a skeleton, and she is a martyr for about three months in the year, and it takes the rest of the time to recuperate her strength. I do not believe she will last many years longer, because her strength is being gradually worn out by the hay-fever, and yet I cannot do anything with her. I say to her: "I will relieve you; I know I can." Her reply is: "I know you cannot." Here is the President of the Hay-Fever Association, Mr. Beecher, and he says he has tried everything, and the only thing he finds to do him any good is to go to the White Mountains, and there we have to go, and that is about the end of it, we cannot do anything more. But I hope you have been able to learn something from my lecture this afternoon, and have gained the idea that the hay-fever is not what it is supposed to be, namely, the hay-fever is not caused by the pollen grain; it is not a hay-fever, but that it is a nervous disease to a certain extent, and that it is a local irritation, and the nasal catarrh or any inflammation of the nose predisposes to it. If I have been able to do that I shall feel very happy, indeed. (Applause.)

In connection with the above address, the following remarks were made upon the subject:—

DR. A. W. MILLER:—Mr. Chairman. The lecture of Dr. Seiler we have just listened to has proved so highly instructive, and at the same time entertaining, that very probably it would be well to have some little discussion, upon the topic which he has touched upon, by everyone. Probably there are some who have suffered from that complaint he has outlined so successfully, and would be glad indeed to know from the Doctor that there is some means of ridding themselves of this complaint. It occurred to me, while the Doctor was speaking, from the manner he described the application of the galvano cautery it was rather pleasant than otherwise in its effects; and I am rather surprised that there are not a dozen applicants for its application, considering the facilities at hand. For my part, I should be glad to see it applied. (Laughter.)

R. B. WESTBROOK, D. D.:—Mr. Chairman. I once heard a devout churchman say that he had proved every article of the creed true except two—the resurrection of the body and the life everlasting. I have had the misfortune to be a sufferer from hay-fever—well, say for a quarter of a century; certainly not less; and from my experience I have proved every theory I have ever heard of, and that has been suggested here this afternoon to be false, except one, and the lecture has impressed me very favorably. From facts connected with my own experience (which, of course, it would not be proper to detain you to relate), I have faith in the suggestions that have been made here this afternoon, and yet I find it difficult to exactly reconcile one or two things. I have found a palliative—almost a specific—for the most stubborn attack of hay-fever in the Turkish or Russian bath. I run through it in about two weeks. After going out in the dust of railway travel, I get over my sneezing by taking a Russian bath for about a fortnight; and instead of being depleted by the bath, I always get stouter and gain in flesh, and get clear of the hay-fever.

That is the only palliative that I have found. I have perfect faith at present, as much as I could have without experiment, in the suggestions that have been made by the Doctor this afternoon. I have not yet tried it.

DR. SEILER :—I do not know whether it would be better to answer questions *seriatim* or *in toto*, after they are all asked ; I do not know which you prefer. I can answer that question now if you wish.

DR. MILLER :—I would like to state that, as there is plenty of time, that the Doctor had better take them *seriatim*, and devote as much attention as possible. We are out earlier than usual to-day.

DR. SEILER :—Then I will explain why it is that a Turkish bath has such a beneficial effect upon hay-fever. I will also state here, for the benefit of those who are willing to try the experiment, that the same good effect will be obtained when you have an ordinary cold in the head.

That is to say, I know of no better preventive for cold in the head than a Turkish bath. Now, why is it. It is simply this—that we have a certain amount of blood in the body ; this blood has got to be evenly distributed in order to keep everything in good, working order. When an inflammation occurs blood is invited to the spot, consequently you have swelling, excitation, and all the other symptoms of inflammation that occur. This occurs when there is a cold in the head. In that case the blood is concentrated in the nose, in the nasal mucous membrane. Now suppose that we give that blood some other engagement for the present time, and that we invite it to some other place. We will invite it to the skin by means of a Turkish bath by opening up the pores and the sweat glands. In that way the blood will be taken away from the nose. The blood will be caused to circulate more freely in the skin, and at the same time we rid the blood of some of its watery constituent. We make it lose, so to speak, for the time being, some of its watery constituents. Now the same body cannot be in two places at the same time ; consequently in getting some blood to the skin it is drawn away from the nasal mucous membrane, and thus the congestion is relieved ; the parts are soothed, the irritation is alleviated, and the hay-fever gets better. But the bath cannot be omitted for twenty-four hours, for if it is, I have no doubt that you would feel the effects again of the hay-fever. You have got to keep on inviting the blood away, and you have got to keep drawing it away all the time. For a cold in the head, as a rule, one bath is sufficient, for that is but a temporary affair. A cold in the head can be cured in this way ; for instance, when you first feel an attack, and a chilly sensation, and know that you are going to have a cold in the head, and you begin to have a burning dryness in the nose, go up to eleven hundred and something Chestnut street or Walnut street, and take a Turkish bath, which will cost you a dollar, but it is worth a dollar ; you can in that way cut short your cold which otherwise would last a week.

REPORT OF THE DELEGATES

Elected to represent the Alumni Association at the Thirty-second Annual Meeting of the American Pharmaceutical Association, held at Milwaukee, Wisconsin, August, 1884, read at the First Social Meeting of the Alumni Association, October 14th, 1885, by the Chairman, L. E. Sayre, Ph. G.

As one of the members of the committee to look after the social interests of these meetings, I have decided, upon this occasion, to present to the Association as a body, not only an official report as chairman of the delegation to attend the American Pharmaceutical Association, but to weave into the report some matters which will aid in relieving it of the dry tedium which necessarily characterizes official reports generally.

The writer recognizes the fact that we have in our classes at the College of Pharmacy, junior and senior students, both of whom are invited to be present, many from distant parts of the country, and it may be that there are not a few to whom a description of a trip to Milwaukee and back will be exceedingly irksome, no matter how spicily it may be portrayed.

The shortest way between Philadelphia and Milwaukee is the pleasantest. The Limited Express to Chicago is one of the modern inventions of travel, and is worthy of praise and participation on the part of the traveller and pleasure-seeker. It is true that there is no time given for botanical excursions on the way, such as is afforded by a local freight or huckleberry train which stops at every farmer's back gate, or whenever one of the train hands has a word to say to his best sweetheart on the line. One of these latter trains it was the privilege of the writer to enjoy for a distance of forty miles upon his return home. Ample opportunity to test the advantages of both systems and to draw comparisons was then afforded. The distance, it is true, was short, but nevertheless I had full facilities to study the flora of several countries. While admitting that such a style of travelling has its own peculiar advantages, I really think the odds lie in favor of the Limited in a trip from Philadelphia to Chicago.

The Limited Express flies past the daisies with lightning speed. Drawing upon the imagination a little, telegraph poles assume the appearance of a wicket fence. Copses of trees miles apart, take on the guise of immense forests. Scattered hamlets appear to the eye as a long line of built-up streets, and the whole world seems flying around a fixed centre, of which your own eye is the axis. Of course I speak highly, figuratively. But in plain language, chemically and therapeutically speaking, a marked feature of these express trains is, that they act most wonderfully as a tonic! Pepsin, wine of iron, hop bitters, hoof trotters, Dutch bitters, and so on infinitum, are not needed to the traveller on these trains, there seems to be something in the speed with which we are whirled through space that tends to produce that craving called hunger. Now in the way of refreshment, we are entirely independent of the outside world, in fact we are an absolute monarchy in ourselves, a sort of travelling wayside inn, having on board a cuisine and corps of waiters that put even the famed Delmonico to blush. As the hour approaches for the meal our appetites are surely and fully developed, and when we finally have eaten, the appetite and the viands have assumed an affinity only equalled by some of which you are soon to study in your chemistry. Both have been eliminated. The appetite is gone and so are,—the eatables per force of mutual attraction.

Only one night on the road from Philadelphia to Milwaukee is necessary by the Limited; whereas, by the ordinary way, it takes thirty-six hours, and two nights are scarcely avoidable. A reading-room is attached to the car, provided with chess, games of different kinds, newspapers; and while ladies are admitted, it is with the tacit understanding that they put up with the cigar smoke.

Milwaukee is about three hours sleepy ride from Chicago; of course, that depends upon how it is taken, but that is the writer's impression of it, having taken it at midnight. Although I was not commissioned to report on a meeting which took place prior to the American Pharmaceutical Association, I cannot refrain from alluding to the National Retail Druggists' Association. Mr. Van Schaak, of Chicago, responding to the call of the President at one of the early meetings, said he had heard so much about cutters and scalpers, he had had his hair cut before he came, he consequently walked into the midst of our Association with a sense of security.

Comparing the west to the east, said he, the terrible scourge of ruinous cutting in prices had not been felt to such an extent in the former regions, and he ascribed the credit to the efforts of the National Retail Druggists' Association that it was not so.

Mr. Campion, the author of the well-known plan for protection against cutters, stated at one of the meetings that if the excellent results already experienced were more generally known, there would be little doubt in the minds of the community as to the success already attained, and that a future entire success was practicable—largely dependent upon the increase in membership, which would necessarily follow. The former gentleman, Mr. Van Schaak, was called upon to speak at a meeting of the second session of the American Pharmaceutical Association, to which he responded in his usual jovial style, He remarked that the object of the wholesale druggists of Chicago was an attempt to solve the problem how to sell the best goods at the lowest prices, in opposition to their neighbors in the east. The American Pharmaceutical Association was, however, interested rather in the scientific interest of Pharmacy. He congratulated the Association that it was not contaminated with trade interests. Thanks to this Association, he, with others, were educated to believe in, and they all advocated, a higher standard for goods they handled.

When the historian of the future shall record the events of the past, he remarked, he would like to know on whose shoulders would be saddled the organization of that giant monstrosity and humbug—the patent medicines. He hoped the day was not far distant when Dr. Snook's Celebrated Anti-Constipation, Compound Cathartic Railroad Pills, and Prof. Sucker's Oleander All-healing Ointment, good for man, and better for beast, recommended by the medical faculties of Asia, Africa and South Sea Islands, shall be numbered among the things of the past, when pharmacy in all its forms shall hold undisputed sway.

Much merriment was excited while the balloting for officers for the ensuing year was going on, by the reading of invitations from a number of prominent breweries for which the Cream City is so noted. The invitations were accepted of course. The largest brewery in the United States—that is, Philip Best's—was visited upon one of the following afternoons. Most members took advantage of a carriage provided for the occasion; as for myself and a few friends, we were able to return from the breweries to our hotel without any such assistance. Philip Best's brewery is well worth a visit. It was established in 1842 on a very limited scale; the work done then was accomplished by five men—the proprietor and his four sons. The product and sales were then necessarily small, limited to two or three hundred barrels a year. The present capacity is half a million barrels a year, which makes it the largest beer-brewery in the world. Three hundred and eighty-five tons of hops are used annually; one million one hundred and fifteen thousand one hundred and sixty-eight bushels of malt are required; fifteen thousand tons of coal are used; five hundred men and sixty teams are employed. The buildings in Milwaukee alone cover ten acres of ground, besides the large wharves and yards. The immense malt and barley elevators have a capacity of seven hundred and fifty thousand bushels of barley and malt. The brewery itself is a monstrous structure, well adapted for the purpose for which it is intended, situated on the west side of Milwaukee, from the observatory of which a perfect view of the city, the surrounding country and Lake Michigan is obtained. The company has a fire department of its own—a stationary steam chemical extinguisher and a full force of well-disciplined firemen. A marvelous work of science, as adapted to perfect machinery, is seen in this building in the artificial manufacture of ice and in the perfected work of brewing.

The most interesting meetings held by the Association are, of course, those which are not contaminated with purely business affairs. It was not till Thursday morning that the anxiously looked for time had arrived for the reading of scientific papers. By that time the members had had quite a surfeit of motions, counter-motions, amendments and amendments to amendments; those who are members of the Zeta Phi perhaps know by this time what amount of time these important (?) elements of a discussion take up. The fate of a motion when it reaches the amendment to an amendment is quite intricate and interesting, it not unfrequently has to be spread out again for furthermore full investigation by laying it squarely on the table, and what is very sad, they are apt to lay there forever; no mind rises in its power strong enough to take it up the second time.

One of the most interesting papers read was that of Prof. Power, formerly of this College, upon the White Alkaloid of Hydrastis, Hydrastine, a sample of which I have brought for your inspection. This substance, contrary to the popular idea, is not yellow but perfectly colorless and transparent in its pure state. I present some of these beautiful, transparent, glistening crystals for your examination herewith. These are very rare; they are part of a lot made from a thousand pounds of hydrastis, manufactured by J. U. Lloyd, of Cincinnati. Prof. Power, has determined, among other things, that this alkaloid bears no relation to berberine. He determined its exact ultimate composition, which was C_{22}, H_{23}, NO_6. That of berberine, being C_{20} (H_{17}, NO_4), a conclusion was drawn from numerous experiments that hydrastine is not only a very weak base, but incapable of forming any crystalizable soluble salts. The crystalizable sulphate, advertised by some manufacturers, was found to be simply an acid sulphate of the yellow alkaloid berberine, to which the name hydrastine is persistently misapplied. A commercial sample of soluble citrate was found to be composed of one molecule of alkaloid and fifteen of citric acid; a neutral salt would require one part of the former to five parts of the latter, the prominence and solubility of this commercial sample was, therefore, easily explained by the very large excess of the citric acid employed.

It would be impossible to give, in the scope of this paper, even a sketch of the more interesting papers read. Prof. Olberg upon perculators. Bartlett upon essay of opinion of the pharmacopœias. The spicy paper, which must be heard to be appreciated (as it will never be published), a criticism upon a method of penetration. Biroth, of Chicago, upon pepsin of crazy, laboratory, etc., etc. Prof. Virgil Coblentz (a recent graduate from this college), from Springfield, Ohio, read a valuable paper on the purity of commercial bromide of potassium; he made elaborate examinations of many samples, and his paper indicated very thorough work; he regards this commercial chemical as being generally of fair purity.

Professor Parson's valuable paper won considerable praise. In regard to the moisture contained in sulphate of quinine, his examination showed that one American brand differs from all the other brands—foreign as well as domestic by containing only six molecules of water instead of seven. The best quinine of all was one of the American brands. The one containing the largest per cent. of moisture was an Italian brand.

A pleasant incident connected with the meeting was the presentation by the exhibitors to Local Secretary Henry C. Schranck, of a rich silver soup service. Mr. Schranck while in the exhibition hall, was informed that a number of gentlemen desired to see him in an adjoining room, on entering which he was confronted with a number of angry looking representatives of the exhibiting firms who demanded an itemized statement of his expenditures, for which they had been assessed. Mr. Schranck was appalled by so rude a request, but was nevertheless about to comply, when the fierce features of the company relaxed into a broad smile, and Mr. Randolph, of the Randolph Paper Box Company, stepped forward apologizing for their apparent rudeness, and presented the costly pieces of silver as a token of their appreciation of the pains-taking and efficient efforts of the Local Secretary in relation to the exhibit.

HOW TO THINK.

An essay read at the Second Social Meeting of the Alumni Association, Tuesday afternoon, November 11th, 1884, by Mr. L. F. Gordon.

If we searched the whole realm of speculation, it would be difficult to find a more interesting subject for review than the one at present before us —How Do We Think?

Pryde tells us, that, "for many ages a knowledge of the human body was not thought necessary in the art of healing. The cure of disease was a matter of hap-hazard. Sometimes indiscriminate drugging and bleeding was used. At other times recourse was had to charms and incantations. Some silly old man or woman was introduced, a rhyme compounded of profanity and gibberish was repeated over the patient, and the disease was supposed to be frightened away."

In the present day the custom is very different. A man who aspires to be a physician must make the body the subject of a long minute and experimental study. He must learn all the different organs and all their different functions. He must learn all the different laws of the human frame; and it is upon his power to aid and *control* these laws that his success in healing is considered to depend.

The treatment of the weaknesses and diseases of the mind has been very much the same. Long ago, indiscriminate drugging, mental drugging, was the rule in teaching. Even *bleeding* was not altogether unknown. Nay, we may say that even charms and incantations were used. The teacher did his work very much like a magician. With rod in hand he stood over his victim, he made several passes and applications of the rod to his victim's body, uttered several sentences and verses in an unknown tongue, the victim repeated them after him, and ignorance and vice were supposed to be cast out.

In the present day, these practices, too, have been changed. It is considered necessary that an educator should know psychology or mental philosophy, that he should understand the nature of the different faculties, and that he should be able to make his teachings harmonize with the laws of the mind. All these qualities, we say, are considered necessary. Whether they are always found in actual existence is a different matter.

Now we, as men of full growth, physically, are not we educators,—educators of ourselves? We are past that stage in life when we can expect to look for guidance from our former teachers and lecturers. We are cast upon our own resources, and if we really desire to be rational, thinking creatures, we must continue our *own* education. By far the best part of man's culture is his self-culture. If we glance over the details of the lives of great thinkers, we think that their great powers came not from what they had acquired at school or college, but from their own mental culture gained in after life.

But how shall we obtain this self-culture? There is but one certain way—that is, to become retrospective and introspective. We must proceed to look into the workings of our mental faculties, and we cannot know the operations of these faculties unless we watch them attentively. In brief, we must know how to think.

Noah Porter says: "Thought not only gives us the most important part of our knowledge, but it qualifies us for our noblest functions. It makes us capable of *language*, by which we communicate what we know and feel for the good of others, or record it for another generation; of *science*, as distinguished from and elevated above the observation and remembrance of single and isolated facts; of *forecast*, as we learn wisdom by experience; of *duty*, as we exalt ourselves into judges and law-givers over the inward desires and intentions; of *law*, as we discern its importance and bow to its authority; and of *religion*, as we believe in and worship the Unseen, whose existence and character we interpret by His *works* and learn from His word."

Thought, in its widest-known sense, is a popular fallacy. Anything that a man may do, feel or be conscious of, is loosely called thought. But this is not the case, *strictly* speaking. Thought, in its proper sense, implies more than this. It is is composed of four different processes of the working of the brain, which we shall designate as—Acquisition, or Observation; Reproduction, or Memory; Comparison, or Judgment; Expression, or Denomination.

Acquisition is that faculty which the brain has of noting material things through the senses—we see, feel, hear, taste and smell certain things in our daily intercourse; and all these exercise upon that finely-organized membrane a certain action; which in itself we cannot explain other than God so will it. This is ordinarily called observation. So it is by observing things around us that the brain takes the initial step toward thought in the whole. By the exercise of this faculty we gain the materials upon which thought is to act. Therefore, the first step in the operation of thought is the gathering together of the materials.

Reproduction is that power which takes up what has been brought to it in the shape of material gained through observation, and shelving it away in the storehouse of the brain for future use, and of knowing where it is stored, so that when the higher faculties call for a certain material to be used in constructing the edifice of some great thought, it shall be forthcoming. All these various things, no matter how small, must be stored away with care for future reference and use. No matter how trifling or infinitesimal it may be, at *some* time or other it will be called for to take its place as a link in some chain of reasoning, and it *may* prove the rivet of the whole.

Comparison:—We now come to the two final and grandest portions of the whole process. It is by these two that all the various ramifications of thought are impelled, guided and controlled. Here lies the motive power, the aim and the restraint. To comparison belongs the duty of taking one fact and comparing it with another. To judge of its proper place and weight in the scale of reasoning. To know whether to accept or reject it as worthy or unworthy of use in the erection of the concept. It asks the questions: Is this of a grain fine enough to place by that other one? Shall this be accepted for utility or finish? It looks over the stores acquired by observation, laid away and kept by memory, and now gets ready for the master-hand the final process.

Expression:—This faculty grasps, in the *aggregate*, all the various data gathered by acquisition, kept and brought forward by reproduction, and connected and sorted out by comparison. It has, therefore, for its work, the naming of the whole and the expression of it, and until it is ready for expression, it can hardly be called a thought. For a while it was in the *raw, unshaped* state; it could really be nothing but a chaotic mass, probably containing all the *ingredients* but not yet erected into form.

We, therefore see, by analysis, that thought is a great deal more complex matter than a hasty survey of the case would seem to indicate upon the surface. Thought, or thinking, literally speaking, is the exercise of the third and fourth powers of the intellect *only*—that is, comparison and expression. *These* are the great *thought* faculties, their operation is thinking, and the result is *thought*. Generally, the word THOUGHT is used for all three, the *thing* itself, its *operation* and its result.

Now, having briefly laid down these four powers of the mind, let us look more into the matter in detail.

Acquisition, or Observation:—These are more familiar to us in that the external objects which surround us are familiar. Our senses ripen in infancy, while the other powers are yet dormant. Observation of the things around us is the one main link of that mysterious chain which connects this familiar material world of ours with the intellectual. The only channels through which we can form any motion of, or be aware of external objects, are certain bodily organs which have been bestowed on us by the Almighty for that purpose. He willed our *creation*, our location; and in the creation endowed us with such faculties of the soul as He in His wisdom deemed best fitted to us in the world of His creation. He has placed in us this power of observation, by which we note the various things and objects in our environment. But our power of observation is more or less limited, and especially in this—that, without the organs, the organs of our several senses, we can become cognizant of no external object. We cannot have the power of vision unless we have eyes, nor can sounds reach us unless we have ears. And it is not alone essential that we should have these organs; but it is an absolute necessity that they should be without flaw or defect. There are, as we know, certain diseases or disasters to the eye that bring on extinction of sight; others that dim the powers of the eye without destroying it entirely; and the same may be applied to the other organs. In speaking of these organs, we must bear in mind that there is a distinction as to what is performing the action. We must remember that it is not the eye that sees; it is only the organ by which *we* see. The ear is not that which hears, but the organ by which *we* hear; and so of the other organs. A man cannot see the attendant satellites of some of the planets in the outer realms of space, except by the aid of a telescope. *Does he, then, infer* that it is the telescope which sees those stars? *Certainly not;* he would not be so foolish. And it would be *just* as foolish to suppose that it is the eye itself that sees or the ear that hears.

Reid, in his Analysis, says: "A second law of our nature regarding perception is that we perceive no object unless some impression is made upon the organ of sense, either by the immediate application of the object, or by some medium which passes between the object and the organ." In the senses of touch and taste there must be actual contact of the article to the organ. In the others this is not possible through the peculiarity of their formation, but still there is an impression made through the intervention of some means of communication. The odor given off from certain articles, brought into contact with the olfactory nerves by the inspiration of the breath, is the immediate cause of smell; the vibrations given to the air by resonant bodies, are the means by which we hear; the rays of light reflected from visible objects passing to the eye, are the means by which we see. We see *no* image of the object unless the rays of light come from it to the eye. We hear *no* sound unless the vibrations of some elastic body occasioned by the sounding body reach our auditory nerve. We can perceive *no* odor unless the effluvia reach our nostrils. We perceive *no* taste unless the savory body be brought in contact with the organ of taste. Nor *do* we perceive any palpable quality of a body unless we touch it with the hands or some part of the body.

It is also a necessity, in order to perceive an object, that the impression made upon any one of the organs be communicated to the nerves and by them to the brain. As there are nerves which serve the muscular portions of our body, so are there nerves which attend upon the senses, and as without the former we cannot move a limb, so without the latter, we can have no perception.

This train of dependants, the omniscience of the Almighty has made requisite to observation. The various members of our body acquiesce in it, and each has its own particular function. First,—the object either immediately, or by some medium, must make an impression on the organ. The *organ* serves only as a medium by which an impression is made on the nerve; and the *nerve* serves as a medium to make an impression upon the brain.

Here the material portion of the process of thought ceases, at least so far as we can trace it. The rest is all intellectual.

Reproduction of Memory:—In the third book of Harris' Hermes, we find the following translation from Alexander Aphrodisiensis, one of the early Greek commentators upon Aristotle. "Now what phansy or imagination is, we may explain as follows: We may conceive to be found within us, from the operations of our senses about sensible subjects, some impression, as it were, or picture in our original sensorium, being a relict of that motion caused within us by the external object; a relict which, when the external within us by the external object; a relict which, when the external object is no longer present, remains and is still preserved, being as it were its image, and which by being thus preserved, becomes the cause of our having memory * * *"

Plato says:—"When the form or type of things is imprinted on the mind by the organs of the senses, and so imprinted as not to be deleted by time, but preserved firm and lasting, its preservation is called memory."

Here we have the definition of memory as given by two of the old Greek philosophers of antagonistic schools, and this is just about as near as we can come to it. What it is in itself exactly we cannot say. Certain it is, that through observation, gain through the medium of the senses, there is an impression or picture of the object left upon the brain, which through certain exercise of the will or association, is reproduced as often as we call upon it. For we know, that after an impression is called up and made use of, it is not destroyed; it is simply reproduced and then filed away again for future reference as it was before. No matter how often we call for it, it is forthcoming and then returned to its original resting place.

According to Reid, "It is by memory that we have a knowledge of things past. The senses give us information of things only as they exist in the present moment; and this information if it were not preserved by memory would vanish instantly, and leave us as ignorant as if it had never been."

Belief is always consequent upon memory. So when a thing is reproduced by memory, we believe that which we remember *really* occurred, and that from the fact of our remembering it, it was an *actual present fact at one time.* This we denominate *real knowledge*, and are no less certain of it than if it were grounded on actual demonstration. The testimony of witnesses in causes of life and death and honor depends upon it, and all the knowledge of mankind of past events is built on this foundation.

We find, therefore, that when an impression has been made upon the mind, it again makes its appearance as an idea. This faculty of reproduction is called memory.

This power is capable of being trained to a remarkable degree of accuracy, as is exemplified by a reminiscence of the late Dr. Addison Alexander of the Theological Seminary at Princeton. He had memory as an intellectual power to a degree almost marvellous. On one occasion a large class of forty or fifty were to be matriculated in the seminary in the presence of the Faculty. The professors and the new students being all assembled in a large hall, each student in turn presented himself before the professors, had his credentials examined by them, and if the same proved satisfactory, entered his name in full and his residence in the register. When the matriculation was complete and the students had retired, there was some bantering among the professors as to which of them should take the register home and prepare from it an alphabetical roll,—a work always considered rather tedious and irksome. After a little hesitation, Dr. Alexander said, "there is no need of taking the register home; I will make the roll for you," and taking a sheet of paper, at once, from memory, without referring to the register, and merely from having heard the names as they were recorded, he proceeded to make out the roll giving the names in full, and giving them in their alphabetical order. This was a prodigious feat of pure memory; for in order to make the alphabetical arrangement in his mind, before committing it to paper, he must have had the entire mass of names present in his mind by a single act of the will."

I call to mind a case, of which I read some time ago, in which an impression was made upon a subject unconsciously. The case was that of a girl somewhere in Europe, who fell sick of a nervous fever, and who constantly raved in unknown tongues, at least, unknown to those around her. They said she was possessed of a learned devil. They tried all the known remedies for exorcising this pedantic imp, but all to no avail. Fortunately, they called in a young French physician, who was somewhat of a philosopher. He thought that this was only a case of reproduction. He began to trace the girl's history. He gathered together learned men from all quarters to hear the ravings of the girl. She gave forth scraps of Greek philosophy and poems, Latin, Hebrew and other languages. It was noted that the Hebrew was rabinnical, and the Greek that of a certain known author's, and there could possibly be no trickery. After a long and indefatigable search, he found that at one time the girl was at service with an old scholar, who was a great linguist, and that it was his custom to pace a long entry in his house, reading aloud, and that he constantly passed and repassed in his walk an open door to a room in which the girl was at work, and consequently the mind of this girl was unconsciously impressed with these snatches which she gave forth in her raving.

Association of ideas plays a very important part in memory.

"More than thirty years ago the late Prof. Dod, of Princeton College, in lecturing to a class on the subject of light, was explaining the solar spectrum, and after exhibiting the solar ray, divided into its seven primary colors—violet, indigo, blue, green, yellow, orange and red, said: 'If you will form the memonic word of the first letters of each of these words, you will be able, without further effort, to remember the order of the prismatic colors the rest of your lives,'' and he accordingly wrote upon the board and pronounced the uncouth and almost unpronounceable word, VIBGYOR, which, probably, not one has ever forgotten. So much for memory.

Comparison:—This faculty compares the knowledges acquired and conserved, and connects them into conceptions, judgments and arguments, and has, therefore, a comparative or elaborate duty. It is by this power that we take the disconnected stores of memory, and after laying the mass out mentally before us, combine the mental images of our past into little heaps of similar facts. In this there is no creation. Its only office is to take from the reproductive faculty or memory the acquired stores of memory, and form them into proper combinations for use. This is the loom of the soul in which the warp is crossed with the wool, weaving the garnered stores of memory into a symmetrical fabric. *Here* conception proper first takes form and shape. *Here* we decide upon what materials shall enter into the formation of our concept, and pass judgment upon their quality. *Here* they are discussed pro and con, and viewed under the searching light of truth. Here we work out, with painstaking care, the various details which go to form a concept, carefully developing and finishing as we go. Certain associations call up in our mind images which have been impressed there, and these images are collected together into a mental picture, and thus the mind grasps the scattered facts in the aggregate. The mind cannot master a multitude of disconnected details. It becomes muddled and then helpless. It must arrange them into groups. Hume has laid down the following as the three great laws of association: "To me there appears only three principles of connection among ideas, namely, resemblance, contiguity in time or place and cause and effect." Pryde says: "Every collection of details can be arranged in groups in such a way that they can be clearly understood. The following is the manner in which this can be done. In studying any interesting scene, let your mind look carefully at all the details. You will then become conscious of one or more effects or impressions that have been made upon you. Discover what these impressions are. Then group and describe in order the details which tend to produce each of the impressions. You will then find that you have comprised in your description all the important details of the scene."

By comparing the material drawn together by the faculty of observation and retained by the memory, and connecting them by certain resembling features or inherent marks, we form ideas or conceptions, classes or general terms. This is thought as *conception*.

By comparing these ideas or conceptions and connecting them by agreement of disagreement, we form judgments or propositions. This is thought as *judgment*.

By comparing these propositions or judgments and connecting them under the light of reason and discussion, we form *argument*.

This faculty, therefore, has for its two distinct characteristics, comparison and elaboration. Under this head we have thought as *conception*, thought as *judgment*, and thought as *argument*.

Expression.—This operation seems to me the most important one of them all. For of what use would our cerebration be without our having the power of making them known.

Now the many details of a thought having been placed in proper train by the other three faculties, it only remains to name it and give utterance. This, Smucker says, in his Psychology, "is incorrectly called the process of communicating our ideas to others." We do not transmit out ideas to others. We only set in motion the machinery of other minds and guide it in the *same* channel in which our mind has run on any given subject. We assist and direct other minds in the *same* direction and to the *same* end. And here we are at once impressed with the important part which observation takes in the process of thought. We are told that it is almost a matter of impossibility to excite in the mind of a native of the tropics, any idea at all as to what snow is. Never having *seen* it, the mind fails to reproduce it.

The faculty of expression, therefore, lies in exciting in the minds of others the same ideas which we have obtained and on which we wish others to think. Not only to merely call them up, but to present them in their proper order and combination, together with such *new* and *explanatory* attributes as we wish to impress.

If we convey ideas by spoken words, the sounds excite within the hearer's mind a certain reproduction, which is in exact and intimate connection with the sounds so heard. This recalls the idea itself. The sound and the idea coincide.

We see, therefore, a close affinity between the sounds of words and the ideas for which the words stand. To better understand this clearly let us see how words are associated or connected with material things, or how they are connected in our minds with ideas of outward things.

I think we see the solution of this in teaching a child to talk. A child's attention, for instance, is attracted by a dog. He extends his hands toward it, cooing and making infantile sounds, expressive of delight. The father pats the animal and encourages the child to do so, at the same time pronounced the word "dog." The mind of the child thus received almost simultaneously two impressions—that of the general features and shape of the animal as obtained by the eye, and that of the sound indicated by the word "dog" as heard by the ear. Thus one will suggest the other. Before this there was no connection in the child's mind between the two ideas—that of sound, and the other of shape. But finding everyone around him connecting the two speaking, he soon learns that the sound "dog" is used to indicate the other—*the animal*. Both these ideas have been gained at one time, and one will always thereafter suggest the other.

We have now hastily gone over a rough analysis of the manner in which we think. All of the various stages are capable of cultivation and enlargement, and the more attention and cultivation we give our minds and its duties, the larger and more beneficial will be its scope.

The four operations of the mind are here given—*Acquisition*, *Reproduction*, *Comparison* and *Expression*, appear to make up all the specific operations of the human soul.

Now, in conclusion, let me say a word to the young men here to-night, who are students—

As I have just said, the various operations of the mind are susceptible of a high degree of cultivation, and to my mind there is *no one faculty which you, in your chosen avocation*, need so much as *memory*. To be sure, you need observation and comparison. But observation is a faculty which we all possess in a greater or less degree, and your lecturers and preceptors train this faculty in your every-day lessons and practice. And the faculty of comparison will be forced into a higher fruition as you train the memory and give it a greater quantity and better quality of material to work upon. Memory, however, needs fostering and development.

The prime factor in memory is attention. You know something about the telegraph system of the human body; how, if you place your finger upon a body having a degree of heat in it, which only a pyrometer could measure, it is telegraphed to the brain, and the brain telegraphs back—*take your finger off*. This takes time, but it takes a mighty short time, as you are probably aware. But then it is really necessary that the brain should have time to take and become impressed with anything gained through the senses. To do this and have a *perfect* and *lasting* impression, it is an absolute necessity that you give your *whole*, *earnest* and undivided attention to the matter immediately before you. If you wish to have memory as a healthy and vigorous faculty, you must take into your brain the materials of your work in a *clean* and *perfect* state. There must be no lazy, half-asleep attention; for recollect, that it has been said that we are blind and deaf while yawning, and if we close up those two important avenues to the brain—the eyes and ears—we will not get much into it. If you get indistinct ideas or impressions, you memory will be indistinct and hazy. You will only be able to remember something about it, but never what it *is* exactly.

John S. Hart, LL.D., says, in a work entitled, "In the School-room; or, Chapters in the Philosophy of Education"—"Memory is God's gift, by which alone we are able to retain our intellectual acquisitions. Without it, study is useless and education simply an impossibility. Without it, there could be no such thing as growth in knowledge. We could know no more to-day than we knew yesterday, or last week, or last year. The man would be no wiser than the boy. Without this faculty the mind would be, not as now, like the prepared plate which a photographer puts in his camera, and which retains indelibly on its surface the impressions of whatever objects pass before it; but it would rather be like the window-pane, before which passes from day to day the gorgeous panorama of nature, transmitting with equal and crystalline clearness the golden glory of the sun, the pale rays of the moon and stars, the soft green of the meadow and woodland—images of beauty and loveliness, of light and shade from every object on the earth and in the heavens, but retaining on its own surface not a line or a tint of the millions of rays that have passed through its substance and remaining to the end the same bit of transparent glass, unchanged, unprofited by the countless changes it has received and transmitted."

The time alloted me is too short to go any further in the matter, but to any of you, who are sincerely desirous of cultivating the memory, I would suggest that you obtain and study the small handbook, published by Eldredge & Son, called "The Cultivation of the Memory."

DIET AND DRINK.

A lecture delivered by Dr. J. M. Anders, Ph. D., at the Third Social Meeting of the Alumni Association, held Tuesday, December 9th, 1884.

Among the questions pertaining to personal hygiene there are, perhaps, none of greater importance than those of diet and drink. It may be questioned whether civilized man ever continued in the full enjoyment of health without some attention to the laws of dietetics. It is undeniable, however, that within the knowledge of all, there are many persons who, though apparently in vigorous health and strength, are utterly regardless of what they eat or drink. But should we take the trouble to closely analyze these cases, it would be found that either they are strongly favored by occupation as in pursuits demanding exercise in the open air, or nature with a lavish hand has endowed them with extraordinary digestive powers. Although it may be delayed until late in life, such persons rarely escape the penalty that is in store for them in the form of various conditions of ill health, when the services of the physician and the pharmacist are required. In view of such considerations, you will grant that an apology for presenting our theme, is scarcely needful. The object of eating is plainly to maintain life and health; to promote growth at certain periods of life, and to repair waste. The old axiom "we should eat to live and not live to eat," is, therefore, not without force. Apart from the mere satisfaction of hunger, eating affords pleasure. The enjoyment associated with eating can be greatly influenced by attention to certain matters, as, for instance, the agreeableness of the taste of food and the impression it is capable of making upon the palate. In his essay on "The pleasure of eating and of the means that may be employed for increasing it," Count Rumford observes, "there are many substances extremely cheap, by which very agreeable tastes may be given to food, particularly when the basis or nutritive substance of the food is tasteless, and the effect of any kind of palatable solid (of meat, for instance,) upon the organs of taste, may be increased almost indefinitely by reducing the size of the particles of such food, and causing it to act upon the palate by a larger surface."

"And if means be used to prevent it being swallowed too soon, which may easily be done by mixing it with some hard and tasteless substance, such as crumbs of bread rendered hard by toasting, or anything else of that kind, by which a long mastication is rendered necessary, the enjoyment of eating may be greatly increased and prolonged." And further on he adds: "If a glutton can be made to gormandize two hours upon two ounces of meat, it is certainly much better for him than to give himself an indigestion by eating two pounds in the same time." In order to derive the greatest pleasure from eating, it is, therefore, absolutely necessary to proceed slowly, allowing the food to remain as long as possible in contact with the organs of taste, and this would insure thorough mastication, which constitutes the first and by no means an unimportant stage of digestion. What a flagrant violation of this precept do we see in the practice of our business men, and I should, perhaps, place in the same category physicians and druggists, who bolt their food with amazing rapidity, as if they wished, without delay, to give their attention to matters of greater importance. This class of individuals not only rob themselves of the pleasures of the table, but also incur the risk of inducing forms of physical suffering, far reaching in their ultimate effects. It is evident then that from the standpoint of health, as well as the fact too frequently lost sight of, that there is a higher pleasure associated with eating than to simply satisfy hunger, we have a most convincing proof of the importance of making a study of this subject with a view to lessening our gastronomic sins.

The food of man, and indeed of all animals is primarily derived from the vegetable kingdom: in other words all animal aliment is prepared by vegetable life. A complete corroboration of this proposition is found in the biblical declaration, "all flesh is grass." The majority of physiologists teach that man is largely a flesh-eating creature. There are, however, other physiologists, equally noted, and among them Milne Edwards, who argue that the human teeth resemble those of the vegetable feeding apes more closely than those of any other class of animal, and it follows, therefore, that the most appropriate food of man must be the "fruits of the earth."

Why, then, it may be asked, has man, in search of aliment, wandered from the practice designed by the author of nature? It is perfectly conceivable that it was the result of an experiment made by an early sanitarian, but it is more highly probable that it was in consequence of the evolution of man's knowledge of cookery. Man, therefore, has become omnivorous. It may be argued too, that the higher and more specialized the organism, the more varied should be the food constituents to meet its full requirements. In the light of these facts the vegetarian must be looked upon as a somewhat eccentric type of reversion to our frugivorous forefathers. Now, although he occupies an extreme, and perhaps unwarrantable position, the vegetarian is by no means to be despised, inasmuch as he serves to direct public attention to, and excite thought upon, the tendency of the present age to an excessive use of animal food. It is unfortunate that there should exist a popular idea to the effect that the generous use of flesh food is essential to the best health and strength.

I wish to premise here, by considering for a moment the classification of food. There are two great classes of human aliment, the nitrogenous and non-nitrogenous, the former class being represented by such articles of diet as lean meat, gelatin, milk, eggs, and the majority of vegetables employed, among which may be mentioned peas, beans, etc., the latter category embracing the fats, sugar, starch, saline matter and water. Now many of the vegetables which enter into man's dietary, contain principles which are of the same composition as those which constitute the nutritious elements in animal food, viz.: albumin, fibrin and casein. The vegetarian, therefore, introduces into his meals all the chief nutritive materials necessary for the maintenance of health, but in view of the old axiom, "variety is the spice of life," and as already intimated, all things being equal, the greater the variety the better for the health of the individual; a certain amount of flesh food must be considered not only admissible, but also actually beneficial. This most excellent idea of variation in diet has perhaps found its most ardent supporter in Duc de Polignac, who could not be induced to eat the same dish more than once per season. It should be noted also that in colder and even portions of the temperate climes it would prove difficult to obtain vegetables in sufficient variety to suffice for the maintenance of health. Again, the fatty articles which form so important a part of the diet of the inhabitants of cold climates, as well as those living in our own latitude during the winter season, could scarcely be obtained in sufficient quantities from the vegetable world, although they there exist in certain oily nuts, olives, etc. Moreover cold weather acts as a digestive stimulant and thus these heat generating animal fats are, by a happy provision of Providence, rendered more easily digestible at a season of the year when most needful.

It is to be distinctly understood that it is not my purpose to denounce animal food or brand its use as a dietetic fallacy, but rather to urge a more moderate use of it. The chief kinds of meat, particularly beef, mutton, veal and pork, are not well adapted to the gastric organs of the very young, the aged, and persons of sedentary habits, and all such persons should use them very sparingly, not exceeding once per day. I should prove false to my own convictions and signally fail in my duty, were I to omit to urge upon your attention a fact of the utmost importance, viz.: that these stronger and more concentrated meats should not under all circumstances form a part of more than two meals daily, still very much better one meal daily, and the last meal into which they enter should be taken as early in the day as possible, in other words, the interval between the last meal and bedtime should be not less than four hours. Whenever practicable "no meat in the evenings," should be a constant watchword. It may, perhaps, be pardonable to refer here to what has been a rule with myself for the past five years, during which time I have used no meat after dinner, which was taken from 1 to 2 o'clock, P. M., and in my judgment, based upon this rather extended experiment, since following the practice, I have been both physically and mentally in better health. The prescribed law of most physiologists, that the chief meal should be taken after finishing the main labor of the day, is doubtless a good one, and when the observance of this rule carries the main meal late into the day, say 6 P. M., the use of meats, other than oysters or fish should be rigidly avoided at lunch in the middle of the day.

And now as I am addressing my remarks to an intelligent and scientific audience, it will be expected of me to give some philosophical reasons for the position taken. In the first place, beef and the other kinds of flesh food mentioned are stimulating and concentrated forms of nutriment, requiring, for perfect digestion, active exercise. Not less than four hours are required for their complete digestion, and hence, if partaken of more than twice daily, the stomach would be obliged to actively carry on the process for from twelve to fifteen hours of the day, and this would certainly result in impairing the functions of the organ in all subjects, saving, perhaps, those whose digestive apparatus are possessed with unusual innate hardiness, but such exceptional cases do not impeach the general law. The reasons for abstaining from meats late in the day, I deem of considerable importance. The practice is objectionable, because of the length of time required for their digestion, being four hours, and likewise because, with most persons, there is no opportunity for sufficient physical exercise to insure their complete conversion into chyme. The result is restless sleep, disturbed by frequent dreams. The system is charged with waste products, and the following morning usually finds such an individual suffering from indescribable feeling of irritability and lassitude; the stomach is foul, as evidenced by furred tongue, impaired appetite and sluggishness of the perceptive faculties.

Concerning the question as to what constitutes the natural food of man, the great physiologist Haller, gives us the following statement: "Our proper nutriment should consist of vegetable and semi-animal substances, which can be eaten before their natural taste has been disguised by artificial preparation." Dr. Oswald holds that "no assumption in dietetics is more gratuitous than the idea that a frequent use of flesh food is indispensable to the preservation of human health."

Now, concerning the use of mollusks and fishes, the case is widely different. The oyster, for instance, is easily digested and most revivifying to the human organism. It appears to exert a peculiarly marked influence in imparting and restoring nervous energy. It is well adapted to convalescing patients, weak digestions, in short should largely replace the stronger meats, since the objections to the latter are not applicable to this form of animal food. The annual increase in the consumption of oysters is a matter of the greatest satisfaction, and should receive from sanitarians the greatest encouragement. The oyster is not a luxury of modern discovery. They were greatly enjoyed by the ancient Greeks and Romans, and, as is the custom of our day, they ate them at the beginning of their banquets. This usage, which the Athenian epicure styles the "gastronomic prelude to the feast," probably grew out of the prevailing idea that they are excellent appetizers. They have an undoubted action in invigorating the digestive system, and in order to get the full "flavor and spirit," they should be eaten the moment they are opened. As a matter of some interest it may be noted that the oyster is cooked in a greater variety of ways than any other article of diet save the egg (*Caterer*).

As an article of diet, fish probably ranks even higher than beef, since it is more wholesome, more easily digestible, and its use being unattended by such unpleasant effects as have been previously described as following the employment of the former. Says Dr. Dio Lewis, "common sense is making headway against the strange popular prejudice against fish-eating that exists among certain classes in England." It is the "brain food" of Dr. Mortimer Granville, and to according Louis Agassiz, the "food of philosophers." What has been said of the adaptability of oysters to certain periods of life and inactive habits of body, applies with equal force in the case of fish.

It is *par excellence*, the flesh food to be employed by the aged, the young, and indeed cannot be too highly valued by all classes and conditions of men. From these considerations it should be recorded as an important truth that any increase in the consumption of fish and oysters, with a corresponding decrease in the use of the more concentrated forms of animal food, such as beef, mutton, veal or pork, would be attended by perceptible improvement in the healthfulness and happiness of a people.

It is true that in certain forms of dyspepsia, or where idiosyncrasies exist, fish and oysters cannot be borne, but such are exceptions and not the rule.

As an article of diet, gelatin, it may be said, has had a somewhat checkered reputation. By our ancestors it was held in the highest esteem as being a highly nutritious substance when prepared in the form of jellies and soups, the nutritive value of the latter being estimated by the consistency of the jelly which they formed on cooling. Such was the traditional belief previous to the investigation into the subject by the Bone Soup Commission, (appointed by the French Academy of Sciences about fifty years ago) which reported in the negative as regards its nutritive value. Subsequent experiments by Milne Edwards and others, again conclusively reversed this verdict. It appears in the experiments of these gentlemen, that although dogs fed on gelatin alone, speedily wasted and finally died of starvation, it was found that by simply adding to the gelatin a small amount of meat soup or the savory juices of flesh, these starving animals rapidly increased in weight and regained their usual vigor. Let me here quote a few of the more important inferences drawn by Milne Edwards from his own investigations. "1. That gelatin alone is insufficient for alimentation. 2. That to render gelatin soup equal in nutritive and digestive qualities, it is sufficient to mix one-fourth of meat soup, and that, in fact, no difference is perceptible between soup thus prepared and that made solely from meat alone. 3. That in preparing soup in this way, the great advantage remains that, while the soup itself is equally nourishing, with meat soup three-fourths of the meat which would be requisite for the latter by the common process of making soup are saved and made useful in another way, as by roasting, etc. 4. That jellies ought always to be associated with some other principles to make them both nutritive and digestible."

Now as bones contain this substance in large proportion—as much as two-thirds of their own weight—and since by the addition of a small amount of beef juice, or what answers the purpose admirably, Liebig's Extract of Meat, it becomes equal in sapidity and nutritive value to the best meat soup, we draw from these facts the lesson that we have in gelatin and jellies an important article of food, and one which is to be particularly recommended on account of its inexpensiveness. It would no doubt be wise for those having charge of hospitals and asylums, to introduce gelatin more largely into the dietary of the inmates.

Among the numerous substances which are found entering into man's dietary, none deserves so prominent a place as sweet, fresh milk. It is not only the most appropriate aliment during infancy and childhood, but since it contains every class of nutriment essential to health, is the most nearly perfect food for all periods and conditions of life. Mankind would be the gainer, should every adult individual consume at least one quart of milk per day. The plea that milk disagrees is, not infrequently, urged as an apology for not using it. In the majority of such instances, nothing more is necessary than to continue using the article in spite of the slight inconvenience it produces, and it will be found soon to be kindly taken by the stomach. If, however, this method should prove unsuccessful, recourse should be had to certain other measures. When, as is sometimes the case, the cause of its not being well borne, is the formation of too hard a curd, a good remedy is the addition of lime water, say twenty-five per cent., or what is still better, to every pint of milk let there be added a gill of cool water into which has been put about fifteen grains of bi-carbonate of sodium and five grains of extractum pancreatis, manufactured by Fairchild Bros. & Foster, N. Y. When prepared after the latter mode, the milk should be kept at a temperature of about 100° Fahr. for thirty minutes, thus, in a great measure, at least, peptonizing it. In this connection, it is well to call attention to a new fact which has been recently brought forward, viz.: that milk taken at a temperature of 110° Fahr., does not form a curd in the stomach, is rapidly absorbed into the circulation, and thus acts more promptly as a nutritive agent. In my own hands, in the case of invalids, the method has been attended by excellent results. It merits further study and application. There is a popular belief, which is seemingly well-founded, that milk does not agree with bilious subjects. According to my own observation, extending over a number of years, such temperaments take an inordinate amount of meat of the stronger forms. At all events, if they can be induced to take less beef, it will enable them to partake of milk with little or no discomfort, and with improvement in health. Such a course is particularly desirable during the warm season. Still another reason frequently offered for not using milk in large cities is the fact that it is so fearfully adulterated. That falsifications are practiced cannot be denied; that so-called "blue milk," which is due to the fungus Oidium Lactis, has been known to produce gastric irritation is also undeniable, and that milk has been found to be the medium through which the specific poison of typhoid fever and other contagious and infectious diseases has been transmitted, has likewise been abundantly proven. Fortunately for the inhabitants of large cities the almost universal falsifications are of themselves harmless, milk being either watered or creamed, and surely this ought to be a welcome fact to Philadelphians, since no one even suspects our Schuylkill water of containing anything that is prejudicial to the public health (?). Water can be detected by noting the specific gravity by the lactometer.

The vegetables that man uses as food form an important part of his diet. Referring to animal life in general, Haller makes the following observation: "*Desmidium corporis humanis gluttenest*," or half their substance is gelatine, or by cookery becomes gelatine. In an excellent series of papers upon the "Chemistry of Cookery" (*Popular Science Monthly*), W. Matthew Williams calls attention to the fact that in vegetable substances the cellular structure is more clearly defined than in the animal. There is surrounding all vegetable cells an enveloping tissue named lignin, which is the most indigestible part of plant structures, rupture this and you encounter other substances within, chiefly starch. Bear in mind, if you please, that the human family feeds largely upon starch, taken in a "multitude of forms." Excluding water, it constitutes more than three-fourths of our well-known "staff of life," and in the case of rice, which is the oriental staff of life, a still greater per centum. All edible grain and seed, such as the pea, bean, lentil, wheat, Indian corn, etc., contain large proportions of this substance. In the potato, which cannot be disassociated from the pleasures of the table, it greatly predominates. Now, these substances, starch and cellulose, form the non-nitrogenous portion of vegetables, and although they are wholesome and needful to health, they cannot, unless aided by some nitrogenous material, maintain life or build up the muscular and the nervous tissues.

It should be stated, however, that both the nitrogenous and non-nitrogenous food constituents are, in a certain degree, mutually controvertible. Starch and cellulose are, doubtless, largely converted into the fat of the body. They also serve as combustible material for maintaining animal heat. According to Williams, ignorance of the fact that these carbo-hydrates, in the form of arrow-root, etc., are incapable of sustaining life has resulted in serious consequences. He writes: "The popular notion that anything which thickens to a jelly when cooked, must be proportionately nutritious, is very fallacious, and many a victim has died from starvation by the reliance of nurses on this theory, and consequently feeding an emaciated invalid on mere starch in the form of arrow-root, etc. The selling of a fancy variety at ten times its proper value, has greatly aided this delusion, so many believing that whatever is dear must be good. I remember when oysters were retailed in London at four pence per dozen. They were not then supposed to be exceptionately nutritious and prescribed for invalids, as they have been lately, since their price has risen to three pence each."

Now, while starch, in one of its various forms, is found in all the vegetables taken as food by man, whilst such important members of this class of aliment as the potato, the different varieties of arrow-root, rice, etc., owe their nutritive value almost entirely to its presence; there is to be distinguished from the latter another category of vegetables which contain a larger percentage of nitrogenous material. They belong to the order of plants known as leguminosæ, and among them stand prominently the pea and the bean. As has already been marked the nitrogenous elements found in the vegetable world are similar in composition and nutritious qualities to those derived from animal food. Thus the leguminous vegetables, above-mentioned, contain a preponderating proportion of legumin, which is identical with the casein of milk; the gluten of the corn and other seeds is similar in composition to fibrin. Albumin, which is an important element of flesh food, is found abundantly in the seeds and juices of vegetables. The latter class of articles also contain other protein bodies, and, unlike the carbohydrates, are capable of maintaining health. The various forms af albuminous matter found in vegetable substances, are termed by the botanist aleurone and crystalloids, and consequently the amount of the latter substances present may be considered an indication of the amount of albuminoids. The percentage of albuminoids in some air dry, seeds and grains is given by Dr. S. W. Johnson, in his valuable "How Crops Grow" (from Wolf & Knapp's table). Time forbids mentioning here more than a few, beans 25.5, peas 22.4, Indian corn 10 and rice 7.5.

Than the natural, unchanged fruits, there is, perhaps, no class of edible substances more wholesome or palatable. Besides the albuminoids and the vegetable acids already mentioned, there are certain fruits which contain an abundance of nutriment in the form of sugar, and prominent among them should be mentioned the banana.

Dr. Atcott holds that a man might live and thrive on an exclusive diet of well-selected fruits, and in this opinion the famous sanitary writer, Dr. Oswald, coincides, providing olives and oily nuts be included. For obvious reasons, therefore, whenever practicable, fruit may with propriety form a part of every meal, and more particularly should it be largely used during the warm season, replacing in so far as possible the animal food, since fruit tends rather to diminish than to increase animal heat, an effect which is very much to be desired during the heated term. Taken at the very beginning of a meal, fruit serves to fulfil a two-fold purpose, viz.: that of an aliment of great digestibility and an appetiser in the most acceptable form.

Among the non-nitrogenous aliments that remain to be briefly considered are the fats, salines and water. As already intimated, the chief purpose of fats in the human system is to generate animal heat, and consequently it would be expected, that in order to maintain the normal temperature of the body, they would be more urgently demanded in cold than in warm climes, and for like reasons, in winter than in summer in our own latitude. Thus the popular belief, which was until recently held also by most authorities, that the fats taken as food in the shape of butter, fat meats, etc., tend to increase the adipose tissue of the body, must be erroneous. The degree of obesity being more directly dependent upon the amount of starch and sugar taken. Upon a knowledge of the latter fact, Banting's method of reducing the weight of the body is based.

Not a few of the saline constituents of food are essential to health. Thus, for example, lime is universally present in the human tissues, and Dr. Parker has ventured the opinion that no cell-growth can take place without it. The most important of the calcium salts is the phosphate. It is a fact well worthy of note, that the lowest forms of vegetable life (bacteriæ and fungi) "will not grow without the earthy phosphates." The potash and soda salts are also known to be intimately associated with nutritive processes and molecular currents. The chloride of sodium—common salt, is absolutely indispensable to the support of perfect health.

There is a class of salts which are of peculiar interest, from the fact that their absence from the system is followed by a state of alnutrition, known as scurvy. I refer to the lactates, citrates and tartrates. Their office in the human economy is to keep the blood and other tissues in a state of alkalinity, and by furnishing them in abundance in the form of fresh vegetables to the scurbutic invalid, relief is certain.

That the physiological significance of the food value of water, particularly by lay persons, is greatly underrated scarcely admits of doubt; at all events, it is undeniable that this universal drink presents a physiological study of marked interest. All organic structures contain a predominating proportion of water. In herbaceous land plants the amount of water is about 75 per cent. of the whole weight (Bessy); in animals the percentage is even higher. It is a well-established fact in botanical science that in actively-growing portions of plants the protoplasm is more watery than elsewhere. In like manner do we find water closely connected with growth and nutrition in the human body. It acts as a solvent for the blood and other important liquids of the system, and furnishes a medium of convection for all nutritive materials to all parts of the body, as well as for the removal of waste products through the various excretory organs. From these considerations it is clear that water should be abundantly supplied to the system. There appears to be great diversity of opinion as to how and when it should be taken, many believing that none should be used during a meal, while some take a different view, considering it harmless when taken in this manner. In view of the well-known physiological fact that water is alone the solvent for the fluid and solid aliments before absorption from the alimentary tract, the opinion that no water should be taken with the food does not seem to be warranted. On the other hand, large draughts of cold water at meal time are capable of effecting injurious results, causing a shock to the nerves, thus interfering with the proper performance of the nervous influence in digestion and too greatly diluting the gastric secretions. One half pint with each meal might serve as a good standard, although the proper amount for each individual can be determined only by personal experience. Probably the best time to take the greater part of the water that we require, the total being about sixty ounces per day, is from two to three hours after meals, when it will favor absorption without, to any extent, interfering with digestion.

The quantity of food necessary for each individual per day is a question of some importance, but here due allowances must be made for such contingencies as habits of life, age, climate, size, digestive capacity, etc. During the cold season more food is required than during the warm, and as already intimated, it must be adapted to the temperature. While undergoing great exertion men require more food. There are few instances, perhaps, where safeguards against the practice of eating too little becomes necessary. Among Thomas Jefferson's golden rules the following one occurs: "We never repent of having eaten too little." This aphorism really hints at the necessity of forestalling the danger of excessive eating, and it cannot be doubted but that the inclination and habits of some persons frequently carry them beyond the limits most conducive to health, even, it may be, into the domain of gluttony. It would perhaps be quite safe to place in the latter category the guest of Savanin, M. Laparte, who, after eating twelve dozen oysters, was asked to dine, and whose gastronomic powers allowed him to proceed with the regular courses as though he had not previously taken oysters. In his admirable work on hygiene, Dr. Parke's gives the following amounts of the different classes of foods for a man per diem in ordinary work. Albuminates, 130 grammes; fats, 84 grammes; carbo-hydrates, 404 grammes; salts, 30 grammes. In other words, 23 ounces avoirdupois of solids; and if to this the daily amount of liquid be added—60 ounces, the result is a total of 83 ounces, or an average of about one-half ounce for each pound weight of the body.

From the time of birth to the appearance of the eye and first set of molar teeth, milk alone should be depended upon for sustenance. It is an incontrovertible fact that the best food for the young of all animals is their mother's milk. Where this is not practicable a suitable substitute must be sought. Now, although some of our most renowned chemists, as the result of much labor, have from time to time produced numerous artificial "paps" and infant foods, and foisted them on the market, still superior to all of them, because a closer imitation of mother's milk, is cow's milk, diluted with half its bulk of water, and to each pint of which has been added a heaped-up teaspoonful of sugar of milk and a pinch of phosphate of lime. Between the ages of two and seven years children should be fed on the more digestible vegetables, with milk and eggs. After the seventh year, which usually marks the period at which the permanent set of teeth appear, animal food is allowable; although, as a general rule, children during their years at school should be restricted to very small allowances of the more concentrated meats. The regime appropriate for adults has already been rudely outlined. It remains, however, to briefly distinguish between the kind of food necessary for persons engaged in mental work and that required in bodily labor. Men who undertake much mental labor had better confine themselves to vegetables, dairy products, fruits, and such meats as fish, fowl and oysters. Those accustomed to performing hard manual toil require most of all the stronger forms of meats. The amount of meat taken and muscular exertion performed should bear a constant relation. The reason for advising meat as a proper form of nitrogenous aliment in those undergoing active muscular exertion are—first, because severe corporeal exertion is a valuable aid to the digestion of meat; and secondly, because it contains in the best form those aliments which are necessary for replacing the wasted muscle. It must be recollected, however, that the amounts of the other sorts of food as starch and fats must be proportionately increased, as these are the most "direct contributors of force."

It is a leading fact in dietetics that the nutritious properties of an aliment depend upon its concentration and digestibility. Apart from structural peculiarities and composition, the latter condition, viz., digestibility, is largely influenced bv the process of cooking. The science of cookery has been, and indeed still is, engaging the minds of some of our leading scientists. A few suggestions concerning the preparation of some of the chief articles of man's diet, though it may appear to be a somewhat trifling subject. which is quite generally intrusted to the practical though unscientific cook, will not be thought out of place.

As an illustration of the value of technical knowledge in cookery let anyone try a simple experiment with two eggs, first cooking one after the ordinary way, which consists in placing it in boiling water for from three to five minutes; then place the other in water at 160° Fahr., and allowing it to remain for about ten minutes or more. The latter will be found to be tender in every part and delicate, while the former is done to hardness in some parts while the other parts may be raw and slimy. The old orthodox way of cooking meat, viz., by plunging in cold water and heating to the boiling point, is as false in theory as it is unsound in practice. In the experiments of W. Mattien Williams it was found that meat placed in cold water rapidly the lost albumen and other fluid constituents, by diffusion into the water. On the other hand, when placed in water at the boiling-point, the superficial layers of albumen were coagulated, the savory and nutrient juices being retained. It follows, from this, that the proper way of cooking—or, as the cooks say, "boiling"—meat is not the "good old way," but first to place the leg of mutton, etc., as the case may be, into water at 212° Fahr. for from five to ten minutes, in order to seal the pores, subsequently keeping it at a temperature of 180° Fahr., and allowing it to remain half as long again as in the ordinary manner. The advantages of the latter over the unscientific method will be readily appreciated by the palate. The same principles should govern the process of roasting meats. In the case of fish, the temperature of the water should never quite reach the boiling-point, for fear of breaking the flesh. There is an advantage of considerable importance in stewing meat. It is, of all methods, the most economical, a small piece of meat sufficing to give rapidity to, and, as already intimated, vastly increase, the nutritive value of a large quantity of vegetable or gelatine-soup. It is the Continental mode, while roasting is that of our British cousins.

It seems incumbent to bestow a moment's consideration upon what have been variously called "bearers of force," "force regulators," "accessory foods"—consisting chiefly of cocoa, tea, coffee and alcohol. Of cocoa it may be truly said, that it is a pleasant, healthful and highly nutritious drink, with a special influence upon the muscular system. The story or conjecture of the introduction of alcoholic liquors by Fabio Colonna, an Italian scientist of the seventeenth century, is, perhaps, less interesting than amusing. He says: "Before people used wine, they probably drank sweet must, and preserved it, like oil, in jars or skins. But in a warm climate saccharine matter is apt to ferment, and some avaricious housewife may have drunk that spoiled stuff till she became fond of it, and thus learned to prefer wine to must." But, by whatsoever method alcohol has come into use, no lengthy argument is needful to show that it has proved to be the foe, and not the friend of man, or, as Dickinson has so well expressed it, "the very genius of degeneration." Among the many wonderful things in nature, none, perhaps, surpasses the varied contrivances which may be seen in all organisms for the purpose of self-protection; and when we reflect that so many myriads upon myriads of our fellow-men are, by the so-called alcoholic habit, morally and bodily ruined, we are almost forced to conclude that, in this regard, Nature has failed to provide for the safety of her children. Apart from the danger of engendering a "specific craving" for alcoholic beverages, have they any special value as articles of diet? Previous to the year 1860 it was almost universally held, that when alcohol was received within the system it was largely destroyed by oxidation, and this explains why it has received the name of "force bearer." Subsequent experiments by Massy, Mill, Pervin, Lallemand and Durroy (quoted by Parkes) appeared to show that very little, if any, was destroyed within the body; in other words, that it was eliminated unaltered by the kidneys, lungs, etc. A re-investigation of the subject by Anstie, Austin, Thudichus and Dupré has again changed this position. The experiments of these gentlemen, and especially those of Dupré, appear to clearly establish the fact that only a minute fraction of the alcohol taken is eliminated by the breath and urine. It must, therefore, be consumed within the body; but its uses and transformation are as yet unknown. From our imperfect knowledge of its physiological action, it is obvious that its value as an article of diet cannot be definitely estimated as yet. When taken in small quantities at meals, it, doubtless, serves to aid digestion; but, owing to the danger of a morbid appetite being created, its habitual use in this manner places in jeopardy the future welfare of the individual. It lessens muscular strength, and, by blunting nervous sensibility, it also lessens thinking power and the flow of nervous currents. The prolonged use of large quantities, or even in amounts that are frequently considered moderate, grave degenerative lesions of a fatty and fibroid nature are set up in all the important internal organs of the body. As an aliment, then, its disadvantages far outweigh its advantages, and the healthy individual had better be a "total abstainer" than a "moderate indulger."

Now it should be remarked that under conditions of disease, alcohol often renders valuable service. Its action upon the heart and the circulatory system is indisputable, consequently when, as not infrequently happens in fevers and typhoid states of the system, the heart begins to show signs of commencing failure, alcohol properly administered, will often prevent its doing so completely. It is also of great utility in other conditions, which my limited time and space will not admit of mentioning.

The well known beverages, tea and coffee, have certain well established effects upon the human system. Both are stimulants to the nervous and circulatory systems, but the one, coffee, appears to have a predilection for the circulation, while the other, tea, has a more decided action upon the nervous system. One of the chief disadvantages from the use of tea and coffee lies in the fact that both contain tannin. They therefore, tend to establish that much-to-be-dreaded habit of body, constipation, and thus not infrequently are the cause of dyspeptic conditions. The prolonged use of tea, in excessive quantities, exerts a deleterious influence upon the nerves and interferes with healthy nutrition. From my own observation, it would appear, that coffee is somewhat prone to give rise to acidity of the stomach. It is recorded that the peculiar property of dispelling sleep possessed by coffee was taken advantage of in connection with the prolonged religious services of the Mahomedans. (*Encyclopedia Brittannica.*)

It is worthy of note that the alkaloid or chief active principle of each of these substances is identical in composition and physiological action with that of the other—coffee containing caffeine and tea theine. Owing to the legumin albumin, sugar and other substances they contain, tea and coffee have considerable value as articles of food, and when employed in moderate quantities, say one cup of each per day, no outward results need be apprehended. According to Williams (*Popular Science* for Dec. 1884), in Italy, Greece, and some parts of the East, it is customary when anybody feels ill, with indefinite symptoms, to send to the druggist for a dose of tea. As a remedial agent, in the case of habitual tea-drinkers, it would be of no value, while on the other hand in non-tea drinkers, when judiciously administered, it would be of great service. The practice of taking tea or coffee for their influence in stimulating the mental faculties and preventing sleep, by those wishing to perform an undue amount of brain work, or by students preparing for examination, is to be deprecated, since it often not only fails of its purpose, but also seriously injures the mind.

After the conclusion of the lecture the following discussion took place upon the subject, participated in by Dr. A. W. Miller, Dr. R. D. Jones, R. B. Westbrook, D. D., Wm. McIntyre and Dr. J. M. Anders, the lecturer:

Dr. A. W. Miller:—The paper to which we have just now listened is so full of valuable suggestions that I think a considerable amount of time might be taken up in considering the various points that have been made. There was a thought which occurred to me just as I entered the door—I am not quite sure that I understood the Doctor correctly, but I think I did—I think he stated he was unable to find any difference in the food value of the highest-priced arrow-roots and the lowest-priced of the starches.

Dr. Anders:—I did not intend to convey that meaning.

Dr. Miller:—That is what I understood was the statement.

Dr. Anders:—My statement was that we could not, from the best of the articles, form any idea of the real value. That was one of the points. The chief point, however, was this—nurses have the idea that anything that becomes solid upon cooling is highly nutritious; and the point is that the substances that they give to their invalids consist only of starch, and starch is incapable of supporting life and strength, because it does not contain the nitrogenous elements of food. That is the chief point.

Dr. Miller:—I was about to ask the Doctor a direct question—whether, as far as his own observation extends, there is any actual difference in value, so far as the nutritive principle is concerned, between a good grade of corn-starch and the high-priced arrow-root. Chemically they are both the same thing, and actually it has been a matter of surprise to me that so many intelligent pharmacists should be willing to allow the high prices to be paid for the arrow-root from the West Indies, which is identical with the corn-starch that we can obtain so cheaply in our own home market. I think the ratio stated—one to ten, is correct. A good quality of corn-starch can be obtained for from four to five cents, while the best quality of Bermuda arrow-root sells for from forty to fifty cents; the ratio is about one to ten, as I think Dr. Anders stated in his paper.

William McIntyre:—I would state from experience and observation that the answer I would give the Doctor is that we are taught to assume no risk with the life of the person. Therefore having found that arrow-root is very digestible, owing to the less amount of insoluble matter, we adhere to the practice of being very conservative, regardless of cost, feeling that such a course is in the best interest of the patient.

DR. MILLER :—The remark of Mr. McIntyre is susceptible of explanation. I do not advocate a substitution. I was asking Dr. Anders a question in order to get his experience in the matter, and whether he could draw any conclusions in the matter concerning the subject.

REV. DR. WESTBROOK :—I am in a position of having taken a good deal of interest in eating and drinking, and it affords me a great deal of pleasure. I very heartily endorse the very able and eloquent lecture to which we have listened this afternoon. When the lecturer perpetrated that little pun, for such it might be called that "All flesh is grass," I was reminded of a little anecdote that perhaps might not be out of place. On a certain occasion during Lent, a very hungry Hibernian heard his priest quote the passage from Scripture, "All flesh is grass," and with his ready wit he thought he saw something which he might turn to his advantage, and he went to the holy father and asked him, "did I understand you to say that all flesh is grass?" "Yes, Pat, certainly you did, and if you don't believe it you are a heretic." "Well, your Honor, if all flesh is grass, would your reverence allow me to eat a beefsteak during this Lent by a way of a salad."

There is one other point which I desire merely to suggest a thought upon. Reference was made to fish diet, which perhaps some of the gentlemen in this college or this audience might profitably investigate. The question is, "why does the Catholic Church allow the use of fish on Friday and prohibit the use of animal food." Now, there is an answer, a historical and physiological answer to that question, and if any one of you get stuck on it, and feel like giving it up, come to me and I will tell you the reason sometime, and the answer will be found to be simply physiological.

DR. JONES :—I think the point Dr. Miller made is a very good one. It does not seem to be understood, however, in the way I understood it. His object of asking the lecturer, as I understand it, was why they used the tapioca in preference to wheat. I think it is our duty as physicians, or as pharmacists, to choose the article that is the cheapest, providing that we accomplish the same result; and it is well known that wheat contains as pure starch as tapioca, as sago or any of the more expensive drugs; and that is the reason why I think it is our duty to choose those cheaper articles on account of the cost to our patients.

DR. MILLER :—There does not seem to be so close an analogy between the wheat and the tapioca as between the two articles mentioned. Wheat flour contains the phosphates. Tapioca, although it is a pure starch, has been practically converted; the kernels being broken open; while in the case of corn starch, in the cheapest forms we can obtain it, we have the starch in identically the same condition as in the arrow-root—both in the natural condition.

As far as the subject presented by Dr. Westbrook goes, I am satisfied to give up the conundrum; I should be very glad to hear the answer to-day.

REV. DR. WESTBROOK :—Mr. Chairman, the audience must positively excuse me, mainly for the reason that it would take up more time than I should like to exact from this audience; and I would like to select my words, my language, to state the facts physiologically in such language as might be properly understood, and yet not be offensive to the delicacy of the audience. If you give the matter fairly up, sometime during these meetings it would afford me a great deal of pleasure to attend them and give my answer; but to-day I ask to be excused.

DR. MILLER:—In reply to the remarks of the Rev. Mr. Westbrook, I would like to say that one of the papers will not be read this afternoon, and there will be an abundance of time; or if he desires to defer the matter it would be my pleasure to appoint him on any afternoon he desires to select to read an article on that subject. How would the second Tuesday in February suit you?

DR. WESTBROOK:—Perhaps that question with some others of a similar character, might be the subject of a paper.

DR. MILLER:—I understand Mr. Westbrook to accept; the secretary will be kind enough to make a note of it.

DR. ANDERS:—I hope I shall be excused from not replying at once. It has been my habit in reading papers to close the discussion, all answers to questions being postponed until my remarks were made in conclusion. I will say briefly that I never found any difference between the efficiency of of corn-starch and the high-priced arrow-roots. I do not consider the most expensive article in the market as worth any more than a well selected article of ordinary grade.

DR. MILLER:—That was the answer I was desirous of eliciting. I have opposed the use of these high-priced imported articles. I don't believe they are any better than the article found in our own market, so far as the value goes.

WHAT IS THE BEST WAY TO WAIT ON A CUSTOMER?

Read by Dr. A. W. Miller, Ph. G., at the Third Social Meeting, Dec. 9, 1885:

Dr. Miller stated that, in lieu of the paper which was to have been read by Mr. Sayre this afternoon, he would read a paper entitled "What is the best way to wait on a customer?" which was written by Mary Brewer, and received the first prize offered about two years ago by Mr. John Wanamaker for the best essay upon the above subject.

Dr. Miller then read the essay, and it was listened to attentively by the audience:

Best is a far-reaching word, for only eternity bounds perfection; therefore, one's utmost endeavor—one's best of to-day—may, and should be, excelled to-morrow. But to determine what is the Best of to-day, and live up to the standard thus established, requires no small study and vigilance.

In order to wait upon customers in the *best* manner, using the term in the broadest and most comprehensive sense, two principles, fixed and immovable as a solid foundation, are always and absolutely necessary.

1st. True loyalty—to your employer.
2d. True loyalty—to your customer.

If either be lacking—it matters not which—the best interests of the employer, and, consequently, of the customer, must suffer; for the customer's best interest is served in proportion as the highest prosperity of the employer is promoted. And as surely as, to secure success in building, the materials used must rest upon a solid foundation, just so surely must the many elements necessary to produce true salesmanship be laid upon these two foundation principles.

The name of these elements is legion, but seldom will they all be required in any one case. The mistake—so easily fallen into—of looking upon the day's customers as a whole—as a troublesome unit—is most disastrous to the highest success. As far as possible, each customer should be treated as if he or she were to be the only one of the day. The rush of business may sometimes, in a measure, prevent this—as in crowded hours attention must often be given to a number at once—but by keeping a quiet mind and collected thoughts it can always be done to a good degree.

Cordiality, honesty, politeness, tact, patience, perseverance, decision, confidence, willingness, enthusiasm, all must be brought into use, some always, some often.

Greet your customer cordially, not with undue familiarity, but with a warmth of manner that says "welcome." She is your employer's visitor, and should be kindly received. Should a friend call upon you to help receive her company, for your friend's sake, you would greet as cordially those who before were strangers to you, as you would your own personal friends. In a sense, your customer is your employer's personal friend," (or, if not you wish to make her so ;) therefore, in his stead, greet her with a friendly, cordial manner.

Wait upon your customer *honestly*. This principle lies close upon the foundation, "true loyalty, to both customer and employer," but in a house where "no misrepresentation" is the command, little need be said on this point. Only let each and all obey in letter and spirit this most important rule. No employer can by any possibility be cognizant of all that is said and done in his name. Therefore all should carry out with earnest fidelity the principles he lays down. An apparent advantage may be gained, a brilliant sale made, or undesirable goods passed off by dishonesty, by even a slight deviation from truth; but as persons once deceived will seldom return to the house that deceived them, it is evident that dishonesty gains but a loss. To wait upon a customer in the best manner, requires a longer look than at the present alone.

Wait upon your customer *politely*, courteously, kindly. Not with an obsequious servile air, but with the manly, womanly politeness that comes from true kindness of heart, the value of which cannot be over-estimated. An habitually polite sales-person of moderate ability will make more friends and customers for a house, than one of marked talent, who is polite one day, snappy the next, indifferent the next. It is easy to be polite to a pleasant customer, but duty requires it towards all; and should one seem not to respond to it, never mind; you have done your duty and honored yourself and your employer. But there are very few persons of so phlegmatic a nature as not to appreciate thorough politeness. Your manner may make all the difference between gaining and losing a customer therefore endeavor so to wait upon all as to secure their return to you in the future, for therein lies one of the essentials of true salesmanship.

Wait upon your customer with *tact*—that peculiar faculty in which is embodied so many of the conditions of success. Use tact that you may gain without offence the many points of information so helpful in selling. To bluntly ask "What do you want it for?" savors of rudeness, yet the knowledge is often useful. A quick perception of the purposes, means, tastes and wishes of your customer, is indispensable to the greatest success. Use tact that you may gain the most for your employer, while you please and satisfy your customer best.

Lose no fitting opportunity for introducing goods beyond those expressly called for; you may give pleasure and information to your customer, and often double your sale. Should an article called for be not then in stock, admit it frankly, but quickly offer a substitute. Tact never says, "We haven't it," and there stops—as in an instance which came to our notice, where jaconet being called for at a well-stocked white goods counter, (not our own), the immediate reply was given, "We haven't it, but you can get it at S's," thus at once putting the house in a poor light and giving the customer the trouble of looking farther—than do which, unless the exact article is required, many would prefer buying a similar or even totally different one.

Wait upon your customer with *patience* and *perseverance*. These qualities may not *always* be needed, but as trusty weapons of warfare they must never be laid wholly aside, especially the former, lest impatience step in and rule the day. Some customers are hard to suit—they may be reasonable or unreasonable; but in either case the salesperson's efforts must be the same. Try patiently and perseveringly one line after another, until, if need be, absolutely nothing remains to be tried. The "lines" need not necessarily be of goods—though never is it right to assume, as is often practically done, "Now I have shown you enough"—for new lights, new contrasts, new lines of thought, will not unfrequently settle the choice upon the article first shown and rejected.

Many a sale is lost through want of persistent effort, and many a customer left to go out dissatisfied and unhappy through lack of patience.

Wait upon your customer with decision and confidence; and to this end, possess yourself of all the knowledge within your reach, relative to the goods you are handling. Never be obliged to say "I don't know" as long as there are means of finding out. It is your business to know, and a mighty weapon will the assurance thus gained be found to be in impressing and interesting your customer, and securing her confidence. Some from natural timidity or indecision of character are wholly unable to make a choice for themselves; to such it is an immense relief to find a salesperson who understands the matter in hand, and who with a clear judgment and firm but unobtrusive confidence, that begets trustfulness, leads the hesitating customer to a decision.

Wait upon your customer *cheerfully*, *willingly*. Let not one leave you without the feeling that you were not willing to show goods and that with cheerfulness. One may show with patience, and with a faultless politeness so far as *acts* go, but with a shaded face and martyr-like air thoroughly chilling to the purchaser. Before a happy, cheery face, and under willing hands, even the goods themselves seem brighter, more suitable, more desirable, and the whims of many a captious customer will vanish, and objections lose their force, before the warm glow of cheerfulness, as gloom vanishes before a glad sunshine. We hear it said, "Well, I would not buy of that one, at any rate, he seems so unwilling to show us anything." And again, "I bought it just because he was so agreeable; it was a pleasure to buy from him."

Wait upon your customer with *interest* and *enthusiasm*. Very little is accomplished in this world without earnestness, zeal, ardor. A listless, half-hearted, indifferent manner stands half way on the road to defeat. We stepped to a counter where lay an article we were in search of, and behind it stood a young woman with folded arms, softly humming a tune, who gazed unconcernedly at us as we examined the said article. "We would like to look at ———s," we suggested. "We don't keep them" (hum, hum, hum.) "Is not this one?" we said. "Yes, but it's all we have" (hum, hum, hum.) "What is the price of it?" we asked, a feeling of vexation beginning to arise. "One dollar and fifty cents," replied the young woman, stepping forward (hum, hum, humming), and replaced with a jerk the ———, which we had moved somewhat. We turned and left her to do her humming. Take an interest in your customers' wants, plans, explanations, difficulties—not to the wasting of your employer's time in idle talking, but to the gaining of your customer. This buy-or-not-as-you-please air is most discouraging and provoking to a customer, and many a one will leave a fully-intended purchase unmade for that reason and no other.

To strive to make as many and as large sales as possible is the imperative duty, and should be the pleasure of all; but to wait on a customer in the best way it must not become so all-absorbing an aim as to give the customer the anything but agreeable feeling that the love of money is the root of all the salesperson's endeavor, and that the hope of "extracting the last cent from her purse" is the sole and only incentive.

Neither must it be allowed to crowd into the background a true regard for the customer's good. A lady of marked intelligence, one of Mr. Wanamaker's best customers, was heard to remark, "Miss Y. is very kind and attentive, but I do not enjoy dealing with her, for I always feel as if she is working for Mr. Wanamaker's interest alone, while with Miss J., though all who know her at all know that she has his interest equally at heart, I lose that feeling, and have a perfect trust and confidence that my interest is being sought as well as his."

To force a sale of doubtful expediency may prove a serious injury; therefore, there will be occasional cases where the best good of both customer and employer may be gained in the end by not making a certain sale, and though at such times the interests of dealer and buyer seem to conflict, the long look shows them to be identical, since, other things being equal, whatever secures a friend and customer for the house—be it making or losing a single sale—is best for all in the end.

In this connection the matter of over-urging is pertinent. How far to press a point must be determined wholly by circumstances. Ordinarily speaking, urging has no place in true salesmanship, yet there is a certain skill and adroitness in managing to bring about a sale that is right and legitimate, and which, when laid securely upon the foundation, "True loyalty to both customer and employer," accomplishes far more than any open urging, and with no offence or wrong to any of the parties concerned.

There are other points of advantage—points not referable to set rules—which a salesperson bound to wait upon every customer in the best way will discover and act upon as each individual case shall suggest. Let no one sit waiting without at least a word of recognition; give equal consideration to all; esteem no customer too poor—no sale too small—to receive full attention.

> "Think naught a trifle, though small it appear;
> Small sands make the mountain, moments make the year,
> And trifles, life."

And we might add, success.

But there are many of your employer's visitors who are not purchasers, yet are none the less "customers," in that they should receive the same welcome, the same polite attention. "Lookers" are, in the estimation of too many salespeople, unpardonable intruders; but if it be remembered that the aim of all should be to gain the good-will of the largest number, the looker will not seem an individual to be passed by on the other side. The pleased, abundantly-satisfied looker of to-day may be the valuable purchaser of to-morrow.

Many persons are ignorant of what the opening season affords, and have besides but a dim idea of what they would like to buy; also conflicts between tastes and means must be reconciled. These must be lookers before they can be buyers, a few moments of courteous showing, a few words of information or explanation, kindly and skillfully spoken, may yield an unexpected harvest, for who can tell "whether shall prosper, either this or that?"

Remember this, do not frighten away a timid looker. If one lingers a moment, and you step up with the question "Did you wish to look at so and so?" or "Can I show you anything?" Though it be asked with all politeness and grace, in nine cases out of ten the reply will quickly come, "Oh, no, thank you, I was only looking," because such questions imply purchasing. But make an apparently casual remark calculated to interest and hold the looker, such as "That piece you have in your hand is one of the newest spring shades. Do you like it?" "Those laces have just come in; our Paris buyer is sending us some beautiful ones just now," and the looker will pause ready to hear or see more, giving you the opportunity to make her your purchaser, if possible, and in any case your effort will not be in vain, for a pleasant impression will be carried home and shown to friends, as certainly as will the purchase.

This establishment has perhaps a greater number of strangers among its visitors than any other of the country's large establishments; for many of its leading features of interest are peculiarly its own, and can be seen in no other house. Thus it has grown and is daily growing more famous,

The more one sees of the business world in general, the more one is impressed by the certainty of the future prominence and fame of this house. Appreciate it then—take a personal pride in it—and esteem it a privilege to bring the leading characteristics of its marvelously perfect system to the notice of your stranger visitors. If buyers, explain carefully the transfer system. See that they are relieved of unnecessary burdens, as extra wraps, satchels, etc., through the checking system. As far as opportunity offers, give them such information as may add to their comfort, the lunch-room, the parlor the lost-and-found department. In short, as all who visit the store are, in a sense, your employer's company, extend to them as may be practicable, every courtesy you would show to your own company at home, remembering that you represent him to them, and that he is more or less judged through you.

Finally, we contend that to attain success—the highest and truest—even the foundation principles must be anchored upon the bed-rock—Christian integrity. To "Do unto others as ye would that they should do unto you," is an always safe rule. "Whatsoever ye do, in word or deed, do all for the glory of God, not with eye service, as men pleasers," but "with good-will doing service, as unto the Lord."

THE GERM THEORY OF DISEASE.

A lecture delivered by Prof. Edward T. Bruen, M. D., of the University of Pennsylvania, at the Fourth Social Meeting of the Alumni Association, Tuesday afternoon, Jan. 13th, 1885.

Gentlemen:—When I was asked to give a lecture this afternoon I was a little at a loss to know how I might properly put together what I have to say to suit the audience that I was to address, which I was told would not be entirely composed of the students of this College. And when I found that I was set down upon the programme to make some remarks instead of delivering a lecture, I felt very glad to know that what I had to say had been put under such an informal title. I also proposed to obtain one of those germs about which I have the pleasure of speaking to you to-day, namely, the bacillus of cholera, and bring it with me and place it under a microscope, so you might see one of those germs, which is now exciting so much attention, and which will probably interest us still more in the time to come. I was told no opportunity would be afforded to the audience to examine this microbe this afternoon. Therefore I did not go to the trouble to bring it down with me. I will say this, that I shall be glad on some other occasion perhaps to demonstrate this microbe to you when it will be possible for you to pass it around and to look at it under the microscope.

This afternoon let us consider for a few moments this question of the germ theory. Now it is very important for all of us to give due credit to our forefathers for what they have discovered. Our forefathers had a great deal to do with the germ theory. It is one of the most ancient attempts of scientific men to explain the methods by which diseases are communicated from one person to another. Those communicable diseases have been studied, as I say, for hundreds of years. Recollect, the germ theory was the attempt made to ascertain by what means diseases are taken from the body of one person and transferred to another.

In 1677 the spermatozoa, a sort of infusoria, was discovered in the urine, and these infusorial organisms were found to have an animal character. These facts were used to sustain the idea that the germ theory explanation of the transference of diseases to the animal organism was correct. But the ideas of the ancients were extremely vague. We will be much amused at the present day by reading in the books of that period what they thought. They described the germs as having the appearance of large mosquitoes or moths, and some of the writers have gone so far as to illustrate their works with pictures showing the long tail by which they were supposed to carry about the germs of disease.

Shortly after this discovery of infusoria in the urine the word malaria came to be used to cover old organic matter, by which it was supposed disease was transferred from one person to another. This word malaria was not restricted by the ancients to living animal matter, but was applied indefinitely to animal matter living and animal matter dead, and to any poison which was conveyed through animal matter from one person to another. It gave rise to the term which has been used a great deal nowadays, and which is a very taking term to our minds. You know bad air, as we are all willing to admit, or air contaminated, is an impure air. This word malaria was a very inclusive term, and one which was very popular. In a word, malaria was used down to perhaps the early part of this century, when the absurdity becoming apparent—the absurdity of connecting every known disease in the vocabulary with a special germ became so great—that the entire theory fell into disrepute.

Now, in 1836, when the nature of the process of fermentation was discovered, the propagation of diseases from one person to another was supposed to take place by means of a ferment, and the Greek word expressing ferment—"zymo"—was used to name, so to speak, the zymotic diseases—a sort of family of communicable diseases, more so than others. Exanthema, scarlet fever, measles, chicken-pox and so forth, were called zymotic diseases, indicating this fact that they were transferred from one person to another by some ferment, which was like the ferment employed in the process of fermentation. It was by-and-by discovered that the infusoria of one of the most contagious diseases—small-pox—were not specific bacteria, simple infusoria, animalculæ, common not only to small-pox but to a great many diseases, and so arose the first theory to oppose this indefinite theory of propagation of diseases from one person to another by malaria, and it was called the physico-chemical theory. Now, this physico-chemical theory is one partially held at the present time. I am speaking of only a comparatively recent date—within ten or twenty years. This theory was started, and it is at the present time held as the method by a great many medical men. This physico-chemical theory amounted to this, that it was believed that disease was propagated from one person to another in a community by a chemical poison—either conveyed from one individual directly, just as the virus of certain poisons is conveyed from one person to another directly, or the virus was conveyed through the medium of some of those germs or some of this animal material, and they used the word contagion to apply to it, to those diseases which were communicated or were considered contagious, and the idea of the word contagion is to touch completely. The word is from the Latin *tengo* and the word *con*, complete —to touch completely. Then, to communicate disease according to this chemical theory, the contact of one sufferer with a healthy person, who is to become afflicted, was necessary. Now, the germ theory, as we know it to-day, recognizes, as I will presently show you, in part this physico-chemical theory; but it is something more. The germ theory attempts to explain diseases by ascribing them to the transference or communication from one person to another of the disease by the germ. It has as distinct a natural history as any other animal in the animal kingdom; in other words, the germ-theory of to-day attempts to trace the life-history of those germs—to trace their mode of growth, reproduction and development. It traces the substance they have been, the localities they inhabit, the circumstances most congenial to their growth, and as these germs are quite as fantastic in their choice of pablum as we are, they use only the food that they like, as it were. Now, with this understanding, which is very different from what the old idea was, which was to speak of poisons as germs, and call it malaria. This is more definite. The germ-theory of to-day is much more precise, because it is so extremely inclusive. It means that each of these germs must be considered in so many different relations. All this is meant by the germ theory, and we call it only a theory, instead of a demonstration, this afternoon. We have—I think we may say—succeeded in demonstrating the life and history of seven of these organisms, but then there are a great many as to which we are still largely in the dark.

I want you to understand why I talk of the germ theory, and not of the germ demonstration. It is because it means so much. Now, according to the germ theory, we make use of the word infectious, and apply it to diseases communicated from one person to another. The word is derived from two words—*in*, and *facio*, to make into. These germs are, then, according to the present theory, made into the human organism. Now, in order to explain this, I think I will ask your attention to a classification of infectious diseases; for you will understand that, according to this germ theory, diseases may be contagious by transference of the germ from, say you to me, or the germ may pass from you to some particular locality and there find the conditions congenial to its development, growth and reproduction. It may afterwards be transferred to my person and then become morbific, as we would term it.

Now these three classes of infectious diseases are as follows—I thought by putting it into this shape, and mentioning a few of the diseases which might be properly classed under these different heads, we might carry away a more definite idea than if I were, in the short time I propose to occupy, to speak more generally.

Now we have, in the first place, certain diseases in which the morbific agent is developed in the blood of a person and reaches its full development in the body. Now such infectious diseases are directly transmitted from the infected to the non-infected individual, and therefore are strictly contagious diseases. Now have we any diseases in which the germ finds its best environment in the human body—in the human blood—and becomes fully developed in the body, and then is transpired to some other person, communicates the disease? We have a large class of diseases belonging to this group, all exanthemata. Measles, scarlet fever, probably diphtheria, are the possible diseases belonging to this class.

Now—passing to the next, because I want to leave these well-known diseases and speak of one or two others, when those in which the morbific agent is developed outside of the body in decomposing organic matter, and is introduced into the system through the agency of the water or the atmosphere—I repeat, that those in which the morbific agent is developed outside of the body in decomposing organic matter and is introduced into the human system through the agency of water or atmosphere. Now we have in this group the great body of malarial diseases. Those diseases which are distinctly traceable to infusoria organisms, which have their best environment outside of the body, and are presented by the medium of water or air, and particularly we have those infectious diseases in which the specific poison is developed in the living organism, but is in a passive state at the time of leaving this organism. It is necessary, for instance, for the germ material under this head to undergo certain changes in connection with decomposing animal matter after it has left the body, before it is capable of giving rise to infection.

Now this is a very important classification of the infectious diseases. Let me give you an illustration from a disease which is very familiar to you. Take typhoid fever. In typhoid fever the poison is taken into the system and is communicated to the whole body, and afterwards it is passed from that system into we will say water, or into the certain organic decomposing animal matter. There it develops, and infecting the organic matter, is transferred to the body of the individual, and gives rise to typhoid fever. Take cholera. Cholera is the disease in which the germs are probably not contagious. Cholera is a disease, when lodged in the body of an individual, and when passed from the body of an individual into certain favorable media, then there develops, multiply. reproduce and become infectious.

I hope I have made myself understood. It is the germ diseases, then, that are simply contagious by being transferred directly from the person of one individual to the person of another. While they are usually contagious when passed in this way from the body of one individual to the body of another—contagious in proportion to the number which grow, develop and reproduce in the new location; but it is possible for disease to be so communicated by means of germs, and yet those germs create certain chemical changes in the body, and by their presence they become catylitic agents, by which certain changes go on in the system and develop disease, without being increased in numbers themselves.

Then we have diseases which are not contagious or infectious in themselves, due to the growth of germs outside of the body altogether, in certain preferable animal matter, but on certain conditions. In swamps, for instance, or in marshy localities, we have malarial diseases. Then we have certain other diseases, infectious, but in which the germs do not mature inside of the human body, but mature only after having passed from the body into certain media which are favorable to their growth, development and reproduction. Among these diseases are cholera, yellow-fever, and we may possibly include typhoid-fever.

Now it is interesting to find out why diseases are so termed. Why certain individuals are infected, and why other people escape. Now let us take an illustration of this. There is a disease which is prevalent in cattle, and which can be developed from the cattle into the human family, called anthrax. Now this anthrax is a disease which is not communicable to such an animal as a pig, although it is communicable to human beings from the cow. It is not communicable to the carnivora, though present in the cow. Then there is another disease which has been studied in detail, viz.: the swine-plague poison. This can produce the same disease in rabbits and mice, but it is perfectly harmless in the guinea pig or the carnivora.

Now how is this? On what possible theory can we explain that a vagaria is possible? Now I say it is very difficult for us to understand thoroughly the life and history of these germs. For example, it has been found by French observers, Chevoit, a celebrated veterinary surgeon that germs will not grow under certain atmospheric pressure, which will multiply under a less atmospheric pressure. I throw out the idea, therefore, that the old explanation of the reason why some individuals are affected, and others escape from the same poison, may give us an explanation, when we know a little more about the life and history of these germs. But at present we know this much, that it is possible to conceive of certain chemical materials in which the human system, or in which the animal system, which will inhibit the growth, development and reproduction of germs. For instance, this material may be present in the pig which is not present in the cow or in the human being. Therefore that this organic or chemical material, although not capable of proof, may inhibit the growth, reproduction and development of anthrax in the pig or carnivora, while that same chemical substance is not present in the herbivora, in the cow or in the human system.

Now we have another explanation of the immunity of certain individuals. These germs can be digested like any other food. Now it has been found more particularly with cholera bacillus, that if an individual is suffering from indigestion, feeble digestion, or an animal is suffering from indigestion the cholera infection will occur. Whereas, take another animal in perfect health, introduce cholera bacillus in the same way and the bacillus will be completely digested and the animal will escape. It has further been found out that when the mucous membrane of the body, through which most of these germs find entrance into the system, when this mucous membrane is in a normal condition it will afford resistance to the entrance of the organisms, which resistance will not occur if there is a catarrhal inflammation of this membrane.

Now let us take another illustration of this fact. I have only time to skim over the matter. You take a disease which you suppose to be due to the bacillus of cholera, or in some way connected with the bacillus, viz.: phthisis; now the exact relation of phthisis or consumption to tuberculosis is not fully established. I would not have you have the idea that we have found out that this disease can be absolutely communicated from one person to another, but what has been found out is this, that a certain bacillus, a specific organism, is constantly present in the tubercular consumptive lesions, and that the evidence seems to abound that the disease can be, under certain circumstances communicated from one person to another.

Now these circumstances are, for example, a catarrhal condition of the mucous membrane, by which the cells of the part, for instance, of the lungs, in case the bacillus are so acted upon that they become vulnerable to the action of this bacillus. Now there are persons born with a susceptible mucous membrane. We call them scrofulous individuals. To such the bacillus is more common than to others. Now by such an illustration as that which I have given you can understand that some may pass through, so to speak, the contagion and escape. For instance, a person with an excellent digestion, a healthy intestinal canal, may resist the affection of typhoid fever. It would attack an individual system less perfectly prepared to resist. Now again there is a very interesting portion of the germ theory which may be studied under the vaccination process. Now you understand that. We all understand that individuals can be protected from the ravages of small-pox by the vaccination of their system or the introduction into their system of some of this small-pox virus, modified by having passed through a cow or the human system. And it is said to be possible to vaccinate against hydrophobia by vaccinating with the virus of hydrophobia from one dog to another. Now how is this done? There are two theories —understand the theory, I dislike the word, but the word is provisional—the theory is either that when the virus is introduced into the system it exhausts, so to speak, the chemical material which is present, so as to inhibit the action of its poison; it destroys this chemical material, and thereby the system is protected, or, on the other hand, there are certain materials in the human organism, certain chemical materials, which, when the bacillus, we will say of the hydrophobia, is introduced, attack it and destroy it, and by this means the system is constantly protected.

Now you know from inference in the alcholic fermentation, just so long as the sugar is present the fermentation will go on; when it is exhausted fermentation ceases. Now it is just so with this theory of vaccination.

In conclusion, let me say a word or two to you about the matter of antidotes to these germs. There are a great many who have a misapprehension as to the germicide or antiseptics which are sold, and the impression which had struck me that you especially as students in the College of Pharmacy should be prepared to correct. Now we have very few germicides, but we have a great many substances which will inhibit the growth, development, reproduction of germs. Now there is a very great distinction, then, between substances which destroy germs and substances which inhibit their growth, development and reproduction. Almost all our solutions which are called antiseptics are simply capable of inhibiting the development of germs. For instance, take the solution of the perchloride of mercury. It is found that one part in six hundred thousand will have an influence upon the development of germ-life, and it is found that one part in three hundred thousand of the same solution will so inhibit the growth and reproduction of these germs that their growth will be arrested.

Now, if it were possible to continue this always—to have these germs always under the influence of these solutions—that would almost be as valuable as though we destroyed them entirely; but it is impossible to disinfect a city with a solution of the perchloride of mercury. You could not do it. Now, again, you take sulphur. Sulphur is capable of stopping the growth of these germs, but these same germs, when taken from the sulphur and put under favorable conditions—which are, as a rule, moisture and warmth, and preferably, decomposing animal matter—will grow again. Now, have we any thoroughly reliable germicide, or destroyer of germs? There are very few available. Of course, we burn these germs, and destroy them in that way, and I beg to call your attention to the importance of taking care of the discharges, in view of the visitation of this community with cholera this next summer—taking the discharges of individuals and burning them, and thereby destroying the possibility of reproduction. Taking the material—the refuse organic material—from our houses and burning it up—burning up the slop, so to speak, which are often thrown out, and become the nidus for the development of germs. Burn those up and destroy them; burn up the animal material which is supposed to contain the germs. So far we can destroy the germs, and apartments can be disinfected and the germs destroyed or killed. If an apartment is thoroughly permeated by such a substance as, for instance, sulphurous acid gas, which is not respirable, and, therefore, this gas can only be used when all the individuals have withdrawn from the apartment, and yet it is very important after contagious or infectious diseases to so flood the apartment with this gas that every inch and corner of it shall be permeated by it, and every article of clothing exposed to it, and in this way the germs may be destroyed. When we have mentioned one or two other irrespirable gases, we have named all the germicides which have been discovered. It is an important branch of the present investigation to discover a greater number of germicides.

Now, when you come down to the antiseptics, we have, among the most valuable, the perchloride of mercury, as I have just said. One part in three hundred thousand will check and keep in abeyance the growth and reproduction of these germs. We have another substance of a somewhat similar character in alcohol. Heat used to be considered sufficient to destroy certain germs simply by boiling, but boiling is only capable of absolutely destroying those germs when the boiling is kept up. I do not mean by that to keep it up continuously, but that there should be repeated boilings. Now, you have heard a great deal about boiling the water. People will say that they will boil the water, and thereby destroy the germ-life in it. It is necessary to boil it for several occasions; that is, to boil it three or four times even before germ-life can be considered absolutely destroyed. It is thought that it is better destroyed through these intermittent boilings than through one constant boiling; in fact, this is rather difficult to understand. I should be satisfied to have the water boiled for a considerable period. But remember that it requires a high heat and a prolonged heat. Now, what is the benefit which will accrue from what we have said about these germicides and antiseptics. It seems to me this: that we cannot leave out diseases which are infectious and not contagious, if we thoroughly make use of all our means for destroying these germs—cleanliness and heat. If we are careful about our eating, careful not to introduce the germs, we can live and laugh at contagious diseases; that is, if we are careful about introducing those germs into our system. Why is this? And with this I will conclude: it is because those germs, as a class, do not float around in the atmosphere—do not float around in the air; they are not volatile, so to speak. They stick fast to objects; in other words, if an object is moist, they adhere to it. I have often thought certain hospitals, which are certainly very full of germs—I have often thought that they were protected by having board floors which are washed, and are moist all the time, and probably the germs stick to the boards. If they were to dry the place up, those germs might possibly be more widely diffused. It is a very great comfort to think that these germs are not volatile, but are heavy, as it were; that is not a scientific term, but it will carry the idea which I wish to convey.

Let me refer to the cholera. Cholera is believed not to be communicable in the air, but if we were to place our hand upon a cholera patient, we would thereby secure some of these vacilli and carry them to our mouths, and thus introduce them into our system. We are careful not to do this, and not to make use of utensils which have been contaminated by an individual suffering from an infectious disease. We can avoid the introduction of them even although we may be in the same apartment with the individual.

Now these remarks that I have made of course could be extended to a very considerable extent. I have endeavored to confine myself to the half hour, that is the time, I believe, alloted to me, but I will be very glad to answer any questions which may be presented to me, if it is so desired.

Discussion upon the above lecture participated in by Dr. Miller, Mr. L. E. Sayre and Dr. Bruen:

DR. MILLER:—Mr. President—I fear the remarks which I happened to make incidentally to Dr. Bruen a few moments ago with regard to the time occupied in his lecture has induced him to cut short his remarks unduly. As we have just heard, the second lecturer this afternoon has been prevented from being present by sickness, I suggest that Dr. Bruen be asked to continue his remarks. If he chooses to do so, I think it would be highly entertaining to us.

DR. BRUEN:—I would be very glad, Mr. Chairman, to do what I have said, and to put what I have to say into the form of replies to any question suggested. Otherwise, I will make a few remarks on the subject of one or two of these diseases. I thought that possibly some one might have come here with a question which they would like to ask.

DR. MILLER:—I would suggest that I would like to hear Dr. Bruen give his views with regard to the efficiency of those articles we are all selling—the chloride of lime, sulphate of copper, sulphate of iron or the permanganate of potassium.

DR. BRUEN:—The permanganate of potassium has been discovered, for instance, by Mr. Cook, who has been one of the most conspicuous workers in this disease, to be a reliable antiseptic, which I think is perhaps a good word to you, to inhibit the growth and development of certain germs, but it has no effect, for instance, on certain others. None, for example, on the cholera bacillus, which is one, I suppose, that we will have ultimately to battle with. We have several of these articles which will inhibit certain germs. I would like to say this much in defence of what might be called pure theory. I commenced by saying that the natural history of these organisms is entirely different one from another. To answer Dr. Miller's question in reference to the permanganate of potassium, applied to all organisms would be very difficult, and to make that difficulty apparent, I speak of the cholera bacillus. It is an extremely difficult bacillus to destroy. It can be destroyed by acid solutions very positively. It can be destroyed by drying. Now it can be inhibited by a wide range of disinfecting substances, but the bichloride of mercury leads the list, and the permanganate of potassium is not very efficacious in its action with that particular germ. Now you apply that to the treatment of cholera, it has been only a suggestion, that so far has come from those who have been studying this disease as to treatment. The introduction of acid solution into the system, and the use of some remedy which shall allay the gastro-intestinal inflammation—opium. Now all ours tudies, so far on that one disease, cholera, has come just about to that point that we should have acid solutions, solutions of sulphurous acid to combat the poison, and opium to combat the intestinal inflammation—to prevent the action of the bowels, which is a nervous symptom.

Now, taking the sulphate of iron, we find it is an extremely good antiseptic, to reduce the others—to reduce the growth, development and reproduction of other germs, but not efficient at all against the cholera germs, and with the rest they belong to the class of agents which destroy. I do think that this one fact is very much, as I said in the beginning, very much overlooked by those who manufacture and sell disinfectants. Remember that a disinfectant is a substance which inhibits, so to speak, It is very valuable to have something which will inhibit the growth. If you take the growth of diphtheria, you have for a time a growth upon the tonsil, and if the mercurial solution which I have named is used, the growth, development and reproduction of the fungus is destroyed or the organism is arrested. Now the disease may be said to be cured if this is done before one or two things have happened. Either before the germ has entered the blood, or before certain temperatural changes have taken place in the blood, which are the consequence of the presence of the germ on the tonsil, or of the amount of those germs in the blood. Recollect that I said that the physico-chemical theory was to the effect that certain chemical substances are introduced into the blood. These chemical substances are capable of creating disease, and that according to modern ideas there was this chemical material also due to the presence of the germ. Now the object is to produce this element, the chemical material, to a minimum, and so the disease is relatively safer in proportion to the number of germs. Now this is I say still an open question. On the whole the weight of evidence seems to incline to a greater number of germs, producing a more violent disease. It is very certain that these conditions cannot occur without the presence of vast numbers of these germs, and all the physico-chemical conditions, making its presence outside the other dependent upon germ-life.

DR. MILLER.—Take the action of strong acids in the treatment of dysentery, which has been used for a long time. Its action must be on the same principle, and we are and have always been in the habit of using the gum-camphor mixture; this may be on the principle of destroying the microbes that have been spoken of.

DR. BRUEN:—That is my theory with respect to cholera. The use of sulphurous acid certainly acts to destroy the microbes.

DR. MILLER:—Probably you will remember that a year ago we were told by Prof. Formad, in lecturing upon the same subject, that in his experiments with reference to carbolic acid, that he found it almost worthless so far as destroying these microbes. It would be interesting to know whether Dr. Bruen can confirm the statement then made.

DR. BRUEN:—I answer that question very readily and say that carbolic acid certainly is not an agent capable of acting as a germicide. It is capable of arresting the growth of certain germs, and it will have absolutely no effect upon others. It is wrong to speak of these germs as a class *en masse*, they must be taken each one separately. Probably you are quite aware of the idiosyncrasy, simply the influence of the poison, some persons are not influenced by the presence of the poison-vine, while others cannot go into its vicinity, it is so with carbolic acid. It is in general terms an agent capable of inhibiting the growth of germ-life. It is not a reliable germicide, with the exception of a very few organisms. I quote one of the most recent writers on the subject, Prof. Kline, who says that he believes that the whole subject of the treatment of these germs by germicides, is almost an open one, and you know that Koch is very much discouraging, too much so I think, too much so, because it would lead you to suppose that the action of this disinfectant was almost entirely useless. Now that is an extreme thought upon the other side. Let us adopt the more comforting side until absolutely disproved, the very comforting demonstration, for it is a demonstration, that the germ-life can be inhibited by certain substances. Let us by all means take up the question vigorously, and removing the pabulum and nidus upon which they feed, because we do know that they do develop and grow and multiply, practically upon organic matter. If you take sulphur and use it as a disinfectant for cholera germs, it will inhibit the growth of those germs. I suppose that if anyone came into an apothecary shop and bought so much sulphur with the intention of putting upon the discharges of typhoid fever or of cholera, you could sell it with the assurance that it would inhibit the growth of those germs, but it would probably by no means be proper to treat those discharges as if the germ was destroyed. In other words, it would not do to throw them where they would damage the water supply. Now that is a very important truth. Suppose you take a country village where the discharges are placed upon the surface of the ground without being covered or disinfected, they would penetrate the soil and contaminate the spring and thus the whole neighborhood. Upon the whole, the best plan is to burn them. The greatest attention should be paid to destroying this organic matter, as you do in this way limit the spread of contagious and infectious diseases.

MR. SAYRE:—I would take advantage of this opportunity to ask a question, and to recall a few remarks bearing somewhat upon this subject, made at the last meeting of the American Pharmaceutical Association, by Prof. Ebert and others. A paper on the fungoid growth found in phosphoric acid, was under discussion. The paper suggested that the proportion of acid was diminished by the presence of this peculiar fungoid. In the discussion that followed the reading of this paper, it was elicited that, according to good authority, this fungoid consisted largely of water. Its bulky appearance was deceptive. One would suppose it might entirely destroy the acidity of this acid solution, but its power to do this was comparatively feeble; it would, however, according to Prof. Formad, materially effect the acid in time, inasmuch as it fed upon this. It was also stated, that this fungoid had toxic properties. May it be possible that it has some relation to the disease-producing fungi? What is the relation it bears?

DR. BRUEN:—The gentleman has spoken of the possibility of experimentations as to the germs in order to determine the absolute substance. This is the only rational method. It is really by this method that Prof. Cooke—a man of great celebrity in this matter—has arrived at an explanation why the cholera bacillus is so active. He has taken this cholera bacillus, and has cultivated it upon certain animal infusions; for example, in certain soups made of meat, and on a potato more particularly, then on animal infusions, and he has found by mixing these materials with the infusions in varying proportions, he has found, for instance, that the perchloride of mercury will limit the proclivity to growth, and just as they take that away, take those germs out and add fresh food, or what is congenial to them, from the soup, so they will redevelop. That can be seen by placing them under a microscope. They are multiplied, and that can be done again and again. Prof. Kline suggests that experiments should be made until we find more substances capable of destroying those germs. We want to find something that can be poured upon those cholera germs to destroy them, so that they will not grow. Now, certain germs may be introduced into phosphoric acid which resist the action of the phosphoric acid, but the materials often found in the acid I should not think were likely to produce the effect; I think it is conceivable that they could. It is conceivable; these things are all conceivable when you assume that certain germs can so readily resist the action of different substances. I shall be happy to talk with the gentleman about that matter.

Dr. Miller:—I merely rose to inquire whether I understood Dr. Bruen correctly with regard to the use of sulphur. Do I understand that it was sufficient to sprinkle the sulphur in a room in its elementary condition, or that it should be always burned to convert it into sulphuric acid, so that we may get the proper germicide?

Dr. Bruen:—I spoke more particularly about the cholera contagion. The flowers of sulphur spread or poured over the dejection from a cholera patient will inhibit the growth of these bacilli, and the same with the micrococcus of diphtheria. The development of this micrococcus is so rapid in diphtheria, the micrococcus cannot yet be said to be found among it. Sulphur will give favorable action in retarding the development of this fungus, perhaps not so rapidly as the mercury acts, but it is a matter of much more convenience.

Dr. F. E. Stewart:—Will the doctor give an illustration of the word inhibit?

Dr. Bruen:—I mean to say by inhibit, that it will retard and temporarily control the growth of the fungus; that is all. That it will simply retard or control entirely the growth and development. Now, the illustration that I would use would be this: The perchloride of mercury in one six-thousandth may retard; the one of three hundred thousand will stop and arrest the development. Now, it might be supposed that if you put in the greater amount of mercury solution, you could destroy this fungi, but that has not been, so far, demonstrated.

COCAINE.

A paper read by Mr. L. E. Sayre, Ph. G., at the Fourth Social Meeting, January 13, 1885.

In these latter days of keen thought and rapid action, the wheel of progress revolves so swiftly that a new subject is scarcely born before it is old, such multitudes are drawn into the field of investigation, that literature is voluminous with reports, and the subject is forthwith apparently exhausted. It has been but a few months since the announcement was made that the hitherto almost unobserved alkaloid—Cocaine—had peculiar properties which had for a long time been sought after in vain in the vast realm of therapeutic agents. Now it is as it were a fact of the past. The local anæsthetic properties of this alkaloid is established by the testimony of thousands. So much has been written upon it, that it seems impossible to add anything new, or to say anything that is not most generally known upon the subject. It may be, however, entertaining and instructive to review very briefly a few interesting points gleaned from the literature of the day connected with the plant from which this drug is obtained, the alkaloid itself and its peculiar properties. In a recent reprint of an article written by C. R. Markham, 1881, by the *American Druggist*, it is stated that the coca plant (*Erythroxylon Coca*) is cultivated between 5,000 and 6,000 feet above the level of the sea, in the warm valleys of the eastern slopes of the Andes, where almost the only variation of climate is from wet to dry, where frost is unknown, and where it rains more or less every month in the year. It is a shrub from four to six feet high, branches straight and alternate, leaves in form and size like tea-leaves, flowers with a small, yellowish-white corolla, ten stamens and three pistils.

In raising the plant from the seed, the sowing is commenced in December and January, when the rain begins, which continue until April. The seeds are spread on the surface of the soil in a small nursery or raising-ground over which there is generally a thatch roof. At the end of about a fortnight they come up; the young plants being continually watered and protected from the sun. At the end of eighteen months the plants yield their first harvest, and continue to yield for upwards of forty years. The first harvest the leaves are picked very carefully, one by one, to avoid disturbing the roots of the young, tender plants. Gathering takes place three times and even four times in the year. The most abundant harvest takes place in March, immediately after the rains. With plenty of watering, forty days suffice to cover the plants with leaves afresh. It is necessary to weed the ground very carefully, especially while the plants are young, and the harvest is gathered by women and children. The greatest care is required in the drying of the leaves, for too much sun causes them to dry up and lose their flavor, while if packed up moist they become fetid. They are generally exposed to the sun in thin layers. Acosta says that in his time the trade in coca at Potosi, was worth $500,000 annually, and that in 1583 the Indians consumed 100,000 cestos of coca, worth $2.50 each in Cuzco and $4.00 in Potosi. In 1591, an excise of 5 per cent. was imposed on coca, and in the years 1746 and 1750 this duty yielded $800 and $500 respectively from Caravaya alone. Between 1785 and 1795, the coca traffic was calculated at $1,207,430 in the Peruvian vice-royalty, and including that of Buenos Ayres, $2,641,478.

The coca trade is a government monopoly in Bolivia, the State reserving the right of purchasing from the grower and reselling to the consumer. This right is generally farmed out to the highest bidder. In 1850, the coca duty yielded $200,000 to the Bolivian revenue.

The approximate annual produce of coca in Peru is about 15,000,000 lbs., the average yield being about 800 lbs. an acre. More than 10,000,000 lbs. are produced annually in Bolivia, so that the annual yield of coca throughout South America, including Peru, Bolivia, Ecuador and Pasto may be estimated at more than 30,000,000 lbs. The reliance on the extraordinary virtues of the coca-leaf amongst the Peruvian Indians is so strong, that in the Huanuco province they believe that if a dying man can taste a leaf placed on his tongue it is a sure sign of his future happiness.

In speaking of the strength the coca gives to those who chew it, a writer relates the following anecdote: "I remember a story which I heard in my native land of Peru, of a gentleman of rank and honor named Rodrigo Pantoja, who, travelling from Guzco to Rimac (Lima), met a poor Spaniard who was going on foot, with a little girl aged two years on his back. The man was known to Pantoja, and they thus conversed: 'Why do you go laden thus?' said the knight. The poor man answered that he was unable to hire an Indian to carry the child, and for that reason he carried it himself. While he spoke Pantoja looked in his mouth and saw that it was full of coca; and as the Spaniards abominate all that the Indians eat and drink as though it savored of idolatry, particularly the chewing of coca, which seems to them a low and vile habit, he said: 'It may be as you say, but why do you eat coca like an Indian, a thing so hateful to Spaniards?' The man answered, 'In truth, my lord, I detest it as much as anyone, but necessity obliges me to imitate the Indians and keep coca in my mouth, for I would have you to know that if I did not do so I could not carry this burden, while the coca gives me sufficient strength to endure the fatigue. Pantoja was astonished to hear this, and told the story wherever he went, and from that time credit was given to the Indians for using coca from necessity, and not from vicious gluttony."

That coca actually can allay hunger for a considerable time is well known, and there is even a case on record where a number of miners had been buried alive in a South American mine and kept themselves alive without food or drink for twelve days with their small supply of coca. The action of coca and cocaine to repress the sensation of hunger, is no doubt partly (or mainly) due to the physiological effect which the drug exerts upon the mucous membrane of the stomach and intestines. Through the repression of circulation in the mucous membrane of the stomach (and accompanying repression of the gastric juice) the process of assimilation is temporarily suspended, and cravings of hunger suppressed until the effects of the drug wear off. If ever a remedy, on purely theoretical grounds, held out any hopes of being serviceable in sea-sickness, it seems to us that cocaine is one of these. At all events, it will be worth while to try its effects.

Since Dr. Koehler, of Vienna, the discoverer, publicly exhibited his experiments proving the efficiency of cocaine as a local anæsthetic, all countries have taken the matter up, and as a rule great enthusiasm prevails, and notwithstanding the slight adverse testimony of a few, it is justly predicted for this alkaloid a speedy and general use, not only in opthalmological practice (for operations, etc.), but for operations and treatment of all mucous surfaces.

E. Merck, of Darmstadt, in a recent circular, reports on the internal administration of the alkaloid. It has, he states, a very exhilarating effect upon the nervous centres, the effect of the drug does not seem to be commutative. It is an admirable restorative from the exhaustion of diarrhœa. Subsequently, excellent results have been obtained in curing the morphia habit. Dr. Freud, of the Vienna General Hospital reports a case of this cured in ten days. His theory is that morphine and cocaine are antagonistic.

According to the experiments collected by Merck, the therapeutical value of cocaine may be thus described:—Cocaine is a stimulant which quickly increases and serves to sustain, in a harmless manner, the physical powers of the body; it is much more strengthening than alcohol, hence its value on all occasions of extraordinary bodily exertion, in doses of 0.05 grms., at intervals. Whether the powers of the mind can likewise be increased and strengthened is still unknown, as also whether the activity of the nerve-centres can be permanently increased. Some good results have been obtained in the treatment of melancholia by the subcutaneous method. It is valuable as a stomachic, particularly after a debauch in eating and drinking. It is credited with the permanent cure of atonic indigestion. The various exhausting fevers, mercurial poisoning, etc., are said to be averted by its use. It is reported from several authorities in the city that when a solution of cocaine is applied to the nasal passages, the venous sinuses below the mucous membrane become, within twenty or thirty seconds, so rigidly contracted as to expel all the blood contained in them, and to cause the membrane to cling closely to the bony structure, which then becomes sharply outlined. In acute coryza—cold in the head—the discomfort from fullness and difficult breathing is almost at once removed. Dr. F. H. Bosworth, of New York, suggests the use of cocaine in hay-fever.

Cocaine citras is used by dentists to anæsthetize the dental nerves. Merck states that this salt can be readily kneaded into pills, which may be wrapped in wadding, moistened and placed in the hollow of the tooth, when, lo! the tooth can be cleaned and filled without pain. If this be true, the man who discovered it is worthy of a high place among the benefactors of the race.

I am informed that an article will appear in the January, 1885, number of the *Therapeutic Gazette*, by Dr. Keyser, reporting several cases showing the effects from hydrochlorate of cocaine in his hands, and also in the hands of several of his colleagues in the ophthalmic line, including the well-known oculist, Dr. Strawbridge. These cases, reported by a single authority, should be carefully studied. One swallow does not make a summer, neither do five, and when so much evidence has accumulated in favor of the drug, it will not do to condemn it without much more evidence against it. A drug which has done so much good must have good qualities, and if it prove to have bad qualities also, cannot the same be said with equal truth, concerning opium, quinine and other standard medicines? What we want to know now is the rationale of its action, so that we may find out its intelligent use, and while we believe in the conservative side in all such matters, let not our conservatism drift into inertia. "Prove all things, and hold fast to that which is good" should be our motto.

With regard to the physiological action of hydrochlorate of cocaine, Dr. H. C. Wood says, that, from what he has been able to learn, it first contracts the blood-vessels and blanches the tissues; this is followed, at least in some cases, by a period of reaction and corresponding dilatation of the vessels, and sometimes by severe pain lasting for a period of fifteen or twenty minutes—more or less.

As to the preparations of the alkaloid. Niemann prepared cocaine by exhausting coca-leaves with eighty-five per cent. alcohol, containing one-fiftieth of sulphuric acid, supersaturating the alcoholic solution with lime, then neutralizing carefully with diluted sulphuric acid, separating the precipitated sulphate of calcium and distilling off the alcohol. The residuary liquid is supersaturated with soda, and then shaken repeatedly with ether, which dissolves out the cocaine. On evaporating the ethereal solution, cocaine remains behind in an amorphous condition, but soon becomes crystalline. It is somewhat purified by washing with a little strong alcohol (?), and then recrystallized from highly-dilute alcohol.

Lossen extracts coca-leaves with rain-water, precipitates with acetate of lead, removes the excess of the latter remaining in solution by means of sodium sulphate, filters and adds soda to the filtrate in slight excess. On shaking this mixture with ether, only cocaine passes into solution, while hygrin remains in the alkaline liquid. The crude cocaine obtained after the evaporation of the ether is dissolved in very dilute hydrochloric acid, and this solution dialyzed, the cocaine passing through parchment-paper, while most of the accompanying coloring-matter remains behind. From the dialyzed acid solution the alkaloid is then precipitated with soda, and obtained pure by several times recrystallizing it from alcohol.

Lossen obtained, in the most favorable case, 4 parts per 1,000, and from poor material 1.6 parts per 1,000. Cocaine crystallizes in four or six-sided monoclinic prisms. It is soluble at 12° C. in 704 parts of water, easily soluble in alcohol and still more so in ether. It melts near 92°. From a dilute aqueous solution of hydrochlorate of cocaine the alkaloid is precipitated by caustic alkalies and their carbonates, also by ammonia and ammonia carbonate, though the latter cause a considerable portion to be retained in solution. Bicarbonate of sodium and potassium yield a precipitate only in its concentrated solution. Sulphocyanide of potassium renders its solution but slightly turbid; so, also, tannic acid, provided free hydrochloric acid is present. Stannous chloride causes a white precipitate, soluble in much nitric acid; mercuric chloride, a copious precipitate, rapidly becoming flocculent, soluble in alcohol and hydrochloric acid; picric acid, a pulvurulent yellow precipitate, soon becoming resinous; phosphomolybdic acid, a yellowish-white, flocculent precipitate; iodine water, or iodized iodide of potassium, a kermess-brown precipitate.

Dilute acids do not alter cocaine, but concentrated acids (sulphuric, etc.) change it into ecgonin, benzoic acid and methyl alcohol, or rather the ether of the latter. Ecgonin is a product of the decomposition of cocaine, and not a natural constituent of coca leaves. Merck reports that he hopes to be able ere long to report on the physiological action of ecgonin.

It may be that we are on the road to a better knowledge of this important and valuable drug. My own feeling in regard to the matter is that we have just discovered that this property of local anæsthesia, exists in therapeutic agents obtained from the vegetable kingdom, and in this line there is no doubt we shall have other substances which will have the same property.

HOW TO EXPERIMENT IN NATURAL PHILOSOPHY.

A paper read by Prof. John E. Cook, Ph. G., at the Fifth Social Meeting, Feb. 10, 1885.

1. In introducing to your attention a subject apparently so foreign to my usual duties in instruction, I hope that I shall be pardoned for stating my reasons for speaking about physical experimentation.

Aside from the natural timidity attendant on the coming examination, the absorbing topic with both Senior and Junior students is, "Upon what subject can I write a thesis?" The relations of the pharmacist and physician, elegant pharmacy, the arrangement of the model store, and kindred subjects, have been written about, until it seems that nothing is left to be said, and the papers have been quietly shelved, only to be occasionally referred to as curiosities of labored literature.

Improvements in pharmaceutical preparations and the chemical analysis of drugs naturally present themselves as eminently proper subjects for an inaugural essay; but how often are the fond hopes of the would-be discoverer frustrated and rudely dashed aside by the labors of a more thorough, and, perhaps, more competent, investigator? The ardent desire of the student to act as godfather to a new alkaloid has acted as a bane on the researches of amateur chemists, and has been the source of more useless literature than would be believed except on an examination of the records.

Now the business of the apothecary is essentially a practical one; and while I concede all credit to those who have devoted their time to the study of manipulations and the physical characters of the substances which they handle, it is a matter of surprise that so little attention has been given by students to the mechanical operations that they are obliged to perform. On second thought, however, I feel that pharmacists are no exception to the rule that a man is loath to leave the beaten track that he has been taught to follow. Again, supposing that a new substance is discovered, its solubilities and reactions are given, but with an ingenious disregard of physical conditions that is truly refreshing. It must be distinctly understood at this point that, in accordance with the objects of the Association, I am addressing myself to the great body of undergraduates who are seeking a subject for an essay, and that I have no intention of detracting from the merits of valuable work done by competent chemists and pharmacists.

2. To the mere utilitarian the word "science" is a sort of bugaboo; to his disordered imagination the word seems to indicate a web of theories that have no solid foundation in fact, and this feeling is fostered by the apparently incoherent series of facts given in the usual text-books. At this juncture I can appropriately quote the remarks of a leading engineer (Fleeming Jenkin); he says that "A student might have mastered Delarive's large and valuable treatise (on electricity) and yet feel as if in an unknown country, and listening to an unknown tongue, in the company of practical men. It is also not a little curious that the science known to the practical men was, so to speak, far more scientific than the science of the text-books." As has been remarked by one of the greatest philosophers of modern times (Herschell), "Science is measurement." To quote Jenkin again, "The difference between the electricity of schools and of the testing-office has been mainly brought about by the absolute necessity in practice for definite measurement. The lecturer is content to say, under such and such circumstances, a current flows or a resistance is increased. The practical electrician must know how much current or how much resistance, or he knows nothing; the difference is analagous to that between quantitative and qualitative analysis." I hope that you will appreciate the force of the last sentence.

3. Gyroscopes, Chinese tumblers, Tantalus cups, model steam-engines that merely "make a wheel go round," Cartesian devils and similar devices are amusing and instructive, and in fact illustrate physical laws of the profoundest import; but to the student who desires to make progress I say, let your studies be mainly directed to measurements and to instruments of precision. The former is to the latter as useless as for the chemist to devote his sole attention to such simple experiments as burning sulphur in oxygen, or making collodion balloons. And as the chemist may make his measures and balances, so the physicist should construct *his* measures. I should not expect the musician to construct his own violin or piano (although the cultivated *artist* should be able to superintend both the construction and repairs of his instrument, and possess the ability to tune them), nor should I expect the author to manufacture the paper upon which he writes; nevertheless, the investigator in physics or chemistry has at almost every turn such varied and new conditions to contend with, that it scarcely pays to have finely-finished apparatus prepared for him, which even at the outset may have to be materially altered in the design. So that, leaving out of consideration the mere matter of cost, unless you prepare your own apparatus, you are apt to be hampered and even discouraged from launching into rich fields of discovery simply from the disinclination to mar or disarrange an exquisite piece of mechanism.

4. Now, while it is an acknowledged fact that it is impossible to acquire thorough scientific knowledge by the study of books alone, without personal observation and research, I shall be confronted with an apparently cogent reason for neglecting this most interesting and important subject, viz.: the great cost attendant upon its pursuit. Treatises, it is true, have been written upon this subject, but they place the student at a disadvantage. For instance, some, like Kohlrausch, dismay the student with a frightful array of mathematical formulæ, useful enough in their way, but requiring a knowledge far beyond the powers of the novice. Abscissas, cosines, and circumferential tangents have a use, but one that is doubtless beyond the grasp of the majority of aspirants for college honors; but it can be readily acquired by a little application and the use of mother sense. Others, like Frick, are very interesting, requiring the outlay of comparatively little money; still very few pharmacy students I warrant are prepared to expend from $300 to $800 for preliminary tools and apparatus. Many (like myself), who have taken real pleasure in

witnessing physical experiments have been deterred from pursuing the subject by the great cost of the apparatus used. The apparatus issued by Ritchie and others is very fine and doubtless worth the price demanded, but the lecture-table is the only place for such work, and even there I trow it would benefit alike the lecturer and the student were cheaper and simpler forms made use of.

5. But enough of extemporizing! I draw your attention to the importance of physical manipulation, and the question naturally arises, " How can I effect this most cheaply and effectively ?" Before entering into the subject, it may be proper to state that physics is a very extensive topic and admits of a division under heads: heat, light, sound, electricity and pneumatics are each studies in themselves. Now the apparatus required for each of these branches is, in reality very limited. The chief operations required are turning and glass-blowing. The main tools for this are a lathe and a glass-blowing table; in conjunction with the lathe may be rigged up a lapidary's table, for the purpose of grinding down crystals. The chief mistake made by amateurs consists in purchasing too many tools at the outset. Do not attempt to make a show of a fine array of tools, the majority of which are unnecessary. With nothing more than a hammer, a vise and a file, the student may make all his drills and turning instruments, and a line of other work that would cost many dollars if purchased ready-made. Again with a head and tail stock, with a second-hand driving-wheel (obtainable from any junk-shop), a lathe may be constructed for one-fifth the cost of those supplied by the dealers.

6. It may be objected that we are not all mechanics, and that the advice given in this paper is impracticable; but the writer knows of many (including himself) who are not mechanical geniuses, and yet, with a little practice, have turned out very creditable work. If one has but the desire and the will to achieve success, he will attain the necessary skill very quickly, and may develop abilities that lie dormant simply from lack of cultivation. It is to such that this paper is addressed, in the hope that it may act as an incentive to the study of a subject of great importance and of intense interest.

7. In conclusion allow me to give you a few hints:

1. Select a branch of physical science to which you will pay special attention.
2. Secure an *elementary* knowledge of this from one or more of the many excellent text-books on physics.
3. Buy few tools and make as many as possible, and rely chiefly on the most primitive ones.
4. Construct apparatus in the simplest manner consistent with its operation. Remember that mere " finish " enhances the cost but not the efficiency of an instrument.
5. And last, but not least, do not be discouraged by the failure of an experiment, but rather seek the cause which may be the beginning of a new set of experiments leading to a valuable discovery.

ON CHLOROPHYLL.

A paper read by Prof. John E. Cook, Ph. G., at same meeting, upon the Query. (See minutes of Fifth Social Meeting, page 74.)

By the formation of the grains of chlorophyll the protoplasm becomes differentiated into a colorless homogeneous part, which forms the proper motile or protoplasmic body of the cell, and into smaller, distinct green portions which remain imbedded in the former, the grains of chlorophyll. This process, as far as concerns the differentiation, is independent of light, at least in flowering plants, where the chlorophyll granules are formed in the cells of the leaves, even in the dark. The chemical process, on the contrary, by which the green color is produced has a complicated dependence on light. A sufficiently high temperature without light is, however, sufficient for the production of chlorophyll in coniferæ and filices, But P. Schmidt in his dissertation *Ueber Einige Wirkungun des Lichts auf Pflaugen*, published at Breslau in 1870, combats these facts; but his experiments only prove that the chlorophyll which is formed in the dark, is again destroyed by long exposure to dark at a high temperature (33° 7 C.) as is also the case with other plants.

In monocotyledons and dicot the grains of chlorophyll which are formed in the dark remain yellow until they are exposed to light of even small intensity, when they become green if only the temperature is sufficiently high, and the nearer the temperature approaches a definite maximum (25° to 30° C.) the quicker does the chlorophyll of angiosperms become green in the light. Provided, therefore, that the temperature is favorable, the chlorophyll in the cotyledonsof conifers and the leaves (or fronds) of ferns does not require light in order to assume its green color, while that in angiosperms does require it, and in both cases the change does not take place at low temperatures. For definite information on this point, I refer you to an article by Guillemin in the *Annales des Sciences Naturelles* for 1857, vol. VII., p. 160.

The lowest temperature at which the grains of chlorophyll turn green was determined for phaseolus multiflorus and zea mais at above 6° and probably below 15°; for brassica napus, above 6°, and for pinus pinea, between 7° and 11° C. The highest temperature at which leaves already formed, and still yellow, turn green, was for the first-named plants above 33°, and for allium cepa, above 36°. This subject is further discussed by Sachs in his *Lehrbuch der Botanik*, and by Alph. Delondolle in the *Bibliotheque Universelle de Geneve* (1865), vol. XXIV., also by Koppen, in a dissertation published at Moscow in 1870.

And now for the composition of chlorophyll, If an alcoholic solution of chlorophyll is agitated with say double its volume of benzole, two very sharply-defined strata are formed after the fluid comes to rest, the lower being yellow and the upper blue-green. Now, Kraus considers this to be a dialytic action, there being, according to him, two coloring substances in the ordinary chlorophyll solution—a blue-green and a yellow one—soluble, in different degrees, in alcohol and benzol. But according to Conrad, if a solution of chlorophyll in absolute alcohol is evaporated, the residue extracted with water does not contain a yellow constituent, as it does when the solution is prepared with dilute alcohol. It is not, therefore, improbable that chlorophyll green is decomposed by dilute alcohol, and that the two constituents of which Kraus supposed chlorophyll to consist did not exist before the operation. Now the composition of chlorophyll is two green substances, viz.: blue chlorophyll, the alcoholic solution of which is of a splendid blue-green color, and yellow chlorophyll, the solution of which is of a bright yellow-green. There is also present chlorofucine, which is of a clear yellow-green; it has many properties in common with the two preceding kinds of chlorophyll, being like both of them, highly fluorescent and easily decomposed into another modification by the action of acids. All three are insoluble in water and soluble in absolute alcohol, but not always in carbon disulphide. In the spectroscope the blue end increases in width in the following order—blue, yellow, chlorofucine.

The composition of chlorophyll, according to Mulder, is $C_9H_9NO_4$, but this cannot be considered as established.

The formation of chlorophyll, according to Verdeil, is first the production of a fatty substance by the action of atmospheric oxygen on starch—$2C_6H_{10}O_5+O_2=C_8H_{14}O+4CO_2+3H_2O$. Then by the simultaneous action of carbonic acid and ammonia, on this fat, under the influence of light, we have—$C_8H_{14}O+2NH_3+10CO_2=C_{18}H_{20}N_2O_3+9O_2$.

Obituaries.

PHILADELPHIA, March 20th, 1885.

To the President and Members of the Alumni Association, P. C. P.

GENTLEMEN :

Your Committee on Deceased Members present the following report:

Death has been unusually busy in our ranks since we met a year ago, and has laid his icy hand upon fourteen of our members. We have had much trouble in securing information concerning some of the list. That presented to-day with reference to one is but brief, but it will be made as complete as possible in time for publication in our Annual Report.

PHILIP LIONEL MILLEMAN was born in Alsace, France, June 19th, 1842; died in Chicago, May 8th, 1884. He served his apprenticeship with Mr. Henry Bronold, of Chicago, afterwards clerked for Mr. Henry Sweet. Wishing to further qualify himself, he came to Philadelphia and entered the College of Pharmacy, graduating in the class of 1866, and joining the Alumni Association March 16th, 1866. While in this city he was in the employ of Mr. B. L. Smedley. After graduating he returned to Chicago and clerked until he went into business on his own account, in 1869, having purchased the old stand of Messrs. White & Bradbrook. After two removals he finally located at the corner of Chicago ave. and Division st., where he remained until the time of his death. He was a man of thought and investigation, and contributed from time to time to the various pharmaceutical journals, and also to the proceedings of the American Pharmaceutical Association.

FRANK CONRATH, M. D. (Class 1875), died of acute consumption, at Milwaukee, Wis., on the 15th day of May, 1884, aged 33 years. He was born in Hesse Darmstadt, Germany, on the 5th of September, 1851. In 1852 he was brought to this country by his parents, who located at Milwaukee. He was apprenticed to the drug business in 1866, and after an experience of three years he clerked for others until 1873, when he came to Philadelphia and entered the College of Pharmacy, graduating with the class of 1875. He then went to Chicago, where he was prominent in matters relating to his profession. Having a natural liking for the medical profession he entered Rush College and graduated in 1880. Then, in order to perfect himself in his profession, he went to Europe and spent two years in the medical schools of Berlin, Vienna and Prague. On his return he located in Milwaukee, where by his energy he soon obtained an extensive practice. He contracted a severe cold in December, 1883, which finally resulted in his death in the following May. Thus passed away a diligent student, and a good and true character. He became a member of the Alumni Association November 1, 1876.

John L. Williams was born at Downington, Pa., in 1854, his father being the Rev. Jesse B. Williams. Upon reaching a suitable age he entered the drug business as an apprentice, serving three and a half years of his time with Dr. Chas. A. Weidemann, of this city, discharging the duties of his position with great fidelity. He graduated number eight in the class of 1874, and became a member of the Alumni Association September 2, 1874. Shortly afterwards he abandoned the drug business and entered upon a course of study for the work of the ministry. He entered the University at Lewisburg, and afterwards Brown University, and had taken one course at Morgan Park Theological Seminary, near Chicago, Ill., where he would have graduated the following summer. At the time of his death, which occurred September 4, 1884, he was visiting among friends in Perry Co., this State. He was on his way to Bloomfield, when the horse taking fright, dashed down a hill, the carriage struck a tree, and our brother was thrown over a bank into a gully some twenty feet from the tree. His injuries were fatal; he lived until 11 P. M., but never spoke. Thus suddenly departed one who was quiet and retiring in his deportment, of decided piety, marked ability, and beloved and respected by all who knew him.

C. W. Frank Moore (Class 1877),died at North East, Md., of brain fever, on July 15th, 1884, aged 29 years. He received his early education at the public schools and the North East Seminary. After serving an apprenticeship from July, 1871, to June, 1873, with Dr. N. B. Morrison, he came to Philadelphia, obtained a situation with August Hohl, and entered the College of Pharmacy, from which he graduated in 1877. He joined the Alumni Association September 4th, 1882. He then went into business for himself at Cherry Hill, Cecil Co., Md., in March, 1879. Owing to his pleasant and courteous manners, he made many firm friends throughout the neighborhood. He was soon appointed postmaster, which office he held at the time of his death. His funeral was attended by a number of societies with which he was connected, and by a large number of friends, especially young men, with whom he had been a great favorite.

Robert Fechtig Finck (Class 1884), joined the Alumni Association March 17th, 1884. He died at the residence of his father, Dr. A. R. Finck, 1120 Girard street, Philadelphia, on Wednesday, December 10th, 1884, aged 26 years. He was born at Wheeling, W. Va., March 26th, 1858, his father being Dr. Anthony R. Finck. He received his general education in the public schools of Philadelphia, and took a full academic course in the Lauderbach Academy and then entered the department of science in the University of Pennsylvania, but failing health compelled him to abandon the course at the end of his Freshman year. He graduated from the National School of Elocution and Oratory in 1880, and from the College of Pharmacy in 1884. He served his apprenticeship to the drug business in his father's store at 208 Girard avenue, Philadelphia, to whose business he expected to succeed. He was a member of the Franklin Institute of Philadelphia, and of the Phonetic Society of Great Britain. For some years before his death he was an invalid, and made frequent excursions in this country, and also, with his brothers, went on an extensive tour of Europe in search of health. These trips, while of pleasure and profit to his mind, were not of benefit to his body. With the exception of occasional periods of suffering, he glided gently down life's stream into the "Haven of Rest." He was a good son, and a consistent member of St. Mark's Episcopal Church, where his funeral services were held. His body was laid away in West Laurel Hill Cemetery.

Samuel Simes (Class of 1833), became a member of the Alumni Association, by resolution passed at the Annual Meeting, 1865. He died at his residence, 1822 Arch street, Philadelphia, March 6th, 1885, aged 71 years. He was born at Washington, Pa., February 21st, 1814. In 1820 he came to Philadelphia, and received his general education at the Friends' Academy, Fourth street, below Chestnut. In 1830 he was apprenticed to Edward B. Garrigues, N. W. corner Sixth and Market. After graduating he clerked for Reeve & Smith. He commenced business for himself at Twelfth and Locust, February, 1834, removing the next year to the N. E. corner Twelfth and Chestnut, where he continued until 1854. He was out of business until he accepted the secretary and treasurership of the Pennsylvania Salt Manufacturing Company, which he held until a year ago, when he resigned on account of failing health. In his business enterprises he was quite successful, accumulating a large fortune. For many years he took a great interest in skating, and was Treasurer of the well-known Philadelphia Skating Club and Humane Society. He was also a much-respected member of the Second Reformed Episcopal Church. On March 4th, he was stricken with apoplexy, and on the 6th he passed away "to that bourne from which no traveler returns."

Wm. Wood Stockton (Class of 1876), joined the Alumni Association Nov. 12th, 1883. He was born in Mount Holly, N. J., the 29th day of August, 1854. His early education was obtained at the public schools of his native town and at an academy in Chester, Pa. His first employer in the drug business was Isaac W. Smith, Ph. G., of West Philadelphia, with whom he remained until a year after graduation. He then clerked for H. R. Kervey, of West Chester until 1880, when he went West. He clerked for some time in Dubuque, Iowa and St. Paul, Minn. In the fall of 1883 he established a drugstore at Huron, Dakota, where he remained until the time of his death, which occurred the 23d day of April, 1884, of nervous prostration. His remains were brought East, and interred in St. Andrew's churchyard, Mount Holly, N. J.

Edward L. Jefferson (Class of 1873), joined the Alumni Association April 2d, 1873. He was born at Smyrna, Del, and was about 36 years of age at the time of his death, Aug. 7th, 1884. He had gone South for the sake of his health, and obtained a situation at Schuman's Pharmacy, Atlanta, Ga. Four days afterwards he died from the effects of an overdose of morphia, taken to relieve uremic convulsions. A beautiful baby boy survives him, his wife having died some time before.

Ambrose Smith (Class of 1834), became a member of the Alumni Association, as per resolution passed at the First Annual Meeting, 1865. Died in Darlington, Harford, Co., Md., on Tuesday, July 15th, 1884, aged 69 years. He was born in Philadelphia, August 8th, 1815, and is supposed to have received his general education at the Friends' School. He served his apprenticeship to the drug business with his cousin, Daniel D. Smith. Sometime after the expiration of his apprenticeship he went into business for himself at the N. E. corner of Seventh and Chestnut streets, where he remained for twenty years. He then removed to the N. E. corner of Broad and Chestnut streets, where he remained for a few years, retiring from business shortly after the death of his wife. He was elected a member of the Philadelphia College of Pharmacy September 16th, 1839, and Treasurer of the College in 1850, which latter position he held for twenty-one and a half years. He was a life-member of the Friends' Twelfth Street Meeting. As a man he was quiet and unassuming in his deportment, and much respected by all who knew him. As a member and officer of the College, he was faithful to every obligation laid upon him. "Let me die the death of the righteous, and let my last end be like his."

John Goodyear (Class of 1837), joined the Alumni Association, as per resolution passed at the First Annual Meeting. Died suddenly, at his residence, Seventeenth and Pine streets, June 15th, 1884, aged 71 years. John Goodyear, son of Jacob and Elizabeth Goodyear, was born near Churchtown, Cumberland Co., Pa., in August, 1813. After obtaining the education of the neighborhood, and working on a farm until his health gave out, he came to Philadelphia in 1832, and apprenticed himself to the apothecary business at Eighth and Walnut streets, kept by Franklin R. Smith, during which time he attended the lectures and graduated at the Philadelphia College of Pharmacy in 1837. For several years afterward he continued to clerk in the same store, with the late H. C. Blair (when the latter became proprietor), and then he concluded to open an apothecary shop at the corner of Schuylkill-Sixth and Pine streets, (being on the outskirt and furthest store out) where he continued in active business until the time of his death, which occurred in June, 1884, of paralysis of the throat. He was an active member of the Dunkard Society, and at one time a local preacher among them. He was married, in 1845, to Ann Eliza Crocker, who survives him, and a son, who succeeded him in the business (since deceased). He was an active, energetic worker, and remained very close to his business, a kind and sympathizing friend to the poor and afflicted and very liberal in the support of charitable societies, not changing with the times. His store had the appearance of an ancient pharmacy, and was a curiosity to the stranger in the city who visited it, to contrast the difference between the times in fitting up stores. He was always glad to see strangers, and had a pleasant word for such, telling them many interesting incidents that happened in his earlier years.

Joseph Trimble, Class of 1834, joined the Alumni Association, as per resolution passed at the First Annual Meeting, 1865. Died in West Philadelphia, July 30, 1884, aged 70 years. He was born in Baltimore, Md., and served his apprenticeship as a druggist with Joshua Jenkins, Market street below Third; afterwards clerked for Henry Troth & Co. He was elected a member of the College March 29, 1836, but resigned his membership the same year on account of removing to Baltimore, where he clerked for several years. On returning to Philadelphia, he clerked for E. & C. Yarnall, and afterwards became a partner in the firm. Since the firm went out of business—about 1866—he has not been connected with the drug trade. He was a member of the Society of Friends, and a man of fine ability and superior character.

Caleb H. Needles, one of the best known of members of our association, and a very prominent citizen of Philadelphia died on Friday, October 10th, 1884, aged 64 years. He was a native of this city and was the eldest son of Edward and Mary Hathaway Needles. His parents were pronounced Abolitionists, and their house at the south-west corner of Race and Twelfth streets shielded from the assaults of an infuriated mob, in his early days, no less a personage than the late W. Lloyd Garrison. Mr. Needles was an earnest Abolitionist himself. He was educated at Haverford College, graduated from the Philadelphia College of Pharmacy in 1841, succeeded his father in the drug business, and when the Philadelphia Retail Druggists' Association was formed, became its first president. In politics he took an active part, especially during the Presidential campaigns of 1860 and 1864; he was also a member and one of the founders of the Union League; a member of the supervisory committee for recruiting colored troops; was one of the old reform committee to whom the late political reforms in the municipal government of the city of Philadelphia are due, and also of numerous other organizations. He was married in 1841 to Anne M. Needles, daughter of John Needles, of Baltimore (also an anti-slavery man). Mr. Needles was noted for his conscientiousness, integrity and independence of character; few excelled him in zeal, energy and public spirit; he became a member of the Alumni Association in 1866, and for many years was a faithful attendant at its meetings. He left a widow, since deceased, and an only child, Edith, who married Dr. A. P. Brubaker, of the Jefferson Medical College.

CURTIS J. BOLLMAN served an apprenticeship with W. B. Mercer, in the town of Mansfield, Ohio, for a term of about two years, after which he was employed about four years by V. B. Finfrock, of the same place; subsequently he attended the lectures of the Philadelphia College of Pharmacy, from which institution he graduated in 1884. After obtaining his degree he again entered the service of Mr. Finfrock, with whom he remained until the time of his death, which occurred Saturday, November 15th, 1884. He was a bright and promising young man, with a clear and vigorous mind, and possessed the admirable faculty of making friends of those with whom he came in contact. He was only about 23 years of age, but already well versed in his profession; he joined our Association in 1884, and was much esteemed by his fellow members.

JOHN ALFRED WITMER was born in East Hampton Township, Lancaster County, Pa., on the 21st of July, 1855. In 1872 he entered the store of Charles Ellis, in Philadelphia, where he remained for two years, afterwards going to Samuel S. Bunting, at Tenth and Spruce, where he continued for five years—in the meantime graduating from the College of Pharmacy, passing number 7 in a class of 105. Some time after that, his health failing, he spent several months traveling in the Western States, in the hope of recuperating. Succeeding partially, he, in 1880, engaged in business on his own account at the S. E. corner of Eleventh and Master, where he was very successful. In the spring of 1883, however, he was compelled to take rest again, this time going to Colorado, where he was apparently much benefitted; but during the entire summer of 1884 he was confined to his bed at his home, in Soudersburg, Pa. In the fall of the same year he again went to Colorado, whence his physician ordered him to El Paso, in Texas; but on the way there he was taken sick on board the train when near Las Vegas, N. M., dying in his berth. He had been accompanied in his travels by Mr. C. M. Smith, of Lebanon, Pa., who took charge of forwarding his remains home, etc. His body was interred at Soudersburg, Lancaster County, his late home, on the 5th of January, 1885. He had many friends in Philadelphia, and much regret was felt for his untimely demise. He joined our Association in July, 1877, and during the years 1883 and '84, was Corresponding Secretary of the Association.

Respectfully submitted,
LOUIS GENOIS,
C. B. LOWE,
J. W. WORTHINGTON,
Committee.

INTRODUCTORY LECTURE

TO THE

Sixty-fourth Course of Instruction

IN THE

PHILADELPHIA COLLEGE OF PHARMACY,

DELIVERED

WEDNESDAY EVENING, OCTOBER 1st, 1884.

BY

JOHN M. MAISCH, Phar. D.,

Professor of Materia Medica and Botany.

Since 1821 the Philadelphia College of Pharmacy has labored for the advancement of that profession which, in the course of time, has been separated from medicine, and made its followers the coadjutors of the physician in combatting disease. Sanitary science has made many and very important discoveries, and the inquiries into the origin of the various diseases are being prosecuted by many scientists in different parts of the world. These researches tend towards removing those causes which hinder or interrupt the natural and regular course of human life; and, as they yield practical results, must unavoidably lead medicine towards a position which has for its primary object the preservation of health, so that the cure of disease and the restoration of health will ultimately be merely of incidental consequence. It cannot be expected that disease would be completely banished from the earth; the influence of cosmic and terrestrial forces is beyond the regulating or preventive power of man, and his own bodily development is the result of numerous factors, of which the living as well as the inanimate beings of his surrounding form a part. But the lessening of disease and the decrease of its severity, as well as the general progress of science in all its branches, work important changes in the healing art, which cannot but involve similar changes in pharmacy. What these changes may ultimately be it is not my present purpose to speculate upon; but as an example of what in a brief space of time may become obsolete, I may point to the bulky potions which, in the memory of many of you, were in vogue, but have been replaced by concentrated preparations and by the active principles, permitting of being taken in an agreeable garb destitute of repulsiveness.

During the sixty-three annual courses of lectures which have been delivered in this College since its existence, without any intermission, even in the dark days of war or of commercial financial collapse, the progress of general science has been steadily kept in view, and the endeavor has invariably been manifest to pave the road towards further improvements, and to so shape the education of its pupils that they might be enabled to actively participate, if not to lead, in the advancement of American pharmacy. Practical requirements have been going hand-in-hand with scientific training; and while the every-day demands of the pharmaceutical store and laboratory are being constantly kept in view, it is of still greater importance that a sound foundation be laid; for it should be remembered, at the very outset, that the primary object of every educational institution should be, and that it is most emphatically, as far as this College is concerned, not merely to prepare its pupils for passing the customary examinations, but to systematize their studies, with the view of acquiring a stock of knowledge that may be available under the most varied conditions of life, and for the frequently changing and often embarrassing demands of business. The scope of this knowledge, as mapped out for you in the different departments, will become clearer and more intelligible to you as you advance in your studies, to which, in justice to yourselves, you should give all the energy that you are capable of.

On several occasions introductory to previous courses, I have discussed themes connected with the nourishment and growth of plants; for the present occasion I have likewise selected, for various reasons, a subject of vegetable physiology. The subject itself, as it is at present accepted in science, is new; in its present shape it dates back scarcely a decade. It is of general interest, inasmuch as it has established views which are completely at variance with those hitherto accepted, although they are as yet applicable to a limited number of plants. It is of particular interest to an American audience; for the three modifications of nourishment which I shall describe, were first observed in plants indigenous to the United States, although one of these plants is also distributed over a considerable portion of the globe; moreover, one natural order of this class is entirely confined to America, and of its eight species, all are found within the territory of the United States, with the exception of one, which belongs to the northeastern portion of South America. The subject is also of special interest to the druggist, pharmacist and physician, inasmuch as several species have been and are still employed medicinally, although none of the plants has been admitted into our Pharmacopœia, yet one at least is found in the new French Codex which also directs from it an *alcoolature*, or tincture made from the fresh plant.

It was in 1875, when the late Charles Robert Darwin published his observations on "Insectivorous Plants." He was not the first one to prove that certain plants are capable of digesting animal matter; but after numerous tedious and long continued experiments, he was enabled to generalize the peculiar functions of certain forms of leaves, and to add to the hitherto accepted sources of nourishment of the various kinds of plants, another source, namely, the flesh and the secretions of recently killed animals; hence the name *carnivorous* plants by which they are likewise known.

Of the five natural orders containing plants of this class, and comprising about three hundred and fifty different species, one order is confined to Australia, the *Cephalotaceæ*; another order, the *Nepenthaceæ* is confined to tropical swamps, but,the species are met with from northern Australia to southern China and the Himalaya chain, extending over the two great peninsulas of southern Asia and the numerous islands of the Indian Ocean. The American natural order, to which I have before referred, is that of *Sarraceniaceæ*, of which one plant, Sarracenia purpurea, attracted especial attention some years ago as an asserted specific in small pox, only to be found deficient in the properties that were ascribed to it. The more numerous species of the remaining two natural orders, comprising the *Droseraceæ* or sundews, and the *Lentibulariaceæ* or butterworts, have accommodated themselves to the most varied conditions, since representatives of these orders, though perhaps most numerous in temperate and sub-tropical regions, are likewise common among the tropics, while some species extend into the Arctic and Antarctic Circles.

One of the sundews, known as the *Venus Fly-trap*, was received by the English scientist, John Ellis, in 1765. The plant grows only in the sandy bogs of North Carolina and adjacent States, and had been collected by John Bartram, that self-made American farmer, of whom the immortal Linné said, that he was the greatest natural botanist in the world. Bartram was born in 1701, in Delaware County, Pa., and was a farmer, but by perseverance and industry became proficient in the classical languages, and more so in his favorite science, botany. The first botanic garden in America was founded by him on the western banks of the Schuylkill, for the cultivation of exotic as well as American plants, and what is left of it may still be seen within the city limits of Philadelphia, a short distance below Gray's Ferry bridge. The leaves of the Venus Fly-trap are all radical, and are usually two to three inches in length; their petiole is broadly winged, and at its apex is abruptly contracted, so as to be united with the blade proper by means of a short connecting-link formed of fibro-vascular tissue of the thickness of the midrib. The blades or lamina of the leaves are nearly circular, are fringed on the lateral margins with a row of hairs and carry upon the upper surface, on each side of the midrib, three spreading hairs. These latter are the true sensitive organs, and as soon as one of them is touched the two halves of the blade close very suddenly, usually in a few seconds and almost invariably in less than one-half a minute; the midrib forms—so to say—a hinge, along which the half-blades are turned upwards, so that they touch each other by the edges of the upper surface. At the same time the marginal hairs are stretched over the edge of the opposite half and interlace with the fringe-like hairs in the same manner as the fingers of two clasping hands. It is the sudden closing by means of which insects are caught, but this closing is effected by the irritation produced from any cause whatsoever. If the sensitive hairs have come in contact with a mineral substance, or if they have been only momentarily touched by animal matter, the leaf will remain closed merely for a short time; it soon begins to unfold, and retains its irritability and its power to close. In the presence of albuminous matter or of small insects, the leaf remains closed for several days, and at once a peculiar action begins, by means of which these substances are liquefied. The upper surface of the leaf contains numerous small glands, which, in the open leaf, are perfectly dry, but in the folded leaf and in the presence of animal matter begin to secrete a colorless, somewhat viscous liquid of an acid reaction, which alters and softens the animal matter, and as this process proceeds, the contact of the half-blades becomes closer; they press firmly upon the enclosed material, the marginal fringes separate, and as the liquefied matter gradually disappears by absorption, the leaf slowly unfolds; but for awhile its irritability is gone, or, at least, materially lessened. If the digestive process had been applied to an excessive quantity of material, or repeated several times, the leaf suffers and perishes from a sort of gluttony or over-feeding. To complete the historical portion of this sketch, it should be stated, that very likely Bartram noticed the secretion from the glands; that Ellis, in 1765, regarded it as a lure for small insects; that Dr. M. A. Curtis, of Wilmington, N. C., in 1834, proved the secretion to make its appearance only after the capture of insects; that Canby, in 1868, showed the subsequent resorption of the liquefied matter, and repeated the feeding and digestive process also with bits of meat; and, finally, that, in 1874, Burdon

Sanderson discovered, during the closing movements of the leaf, the development of electric currents, which Munk, in 1876, showed to proceed from the upper parenchyma cells of the leaf-blade and midrib.

While in the Venus fly-trap insects are caught through the infolding of the leaves, the sundew's proper use for this purpose mainly the glandular hairs. Drosera rotundifolia, the round-leaved sundew. is the *herba rorellæ* or *herba roris solis* of last century's pharmacy, and has been deemed important enough for admittance into the new Codex Medicamentorius of France. It inhabits boggy localities throughout the greater portion of the northern hemisphere, and is frequently accompanied by one or two allied species. It is especially interesting since it is the first plant in regard to which assimilation of animal food was suggested through experiments made by the German scientist, Roth, in 1779, and by the English investigator, Whateley, in 1780. Darwin's observations with this plant were particularly thorough and extended over a period of nearly fifteen years; and Clark, in 1875, proved on this and several other plants, by means of the spectroscope, that the leaves in reality are capable of absorbing albuminous compounds. The glands, which contain a purple colored homogeneous fluid, and secrete a neutral viscid liquid, are situated upon hairs, increasing in length towards the margin of the leaf. An insect touching one of these glands, adheres to it through the viscid secretion, and by its struggles to extricate itself, irritates the surrounding hairs which begin to bend towards the centre of the leaf, and thus by a kind of rolling motion shove the insect in the same direction. Simultaneously the secretion is accelerated, the insect becomes covered with it, its tracheæ are closed up, it is benumbed, and finally dies by suffocation or drowning. Usually within about 15 minutes the struggles cease and the nearest hairs now bend down, the motion taking place from near the base, through the entire length of the hairs, until the glands press firmly upon the victim, the outer circles of the hairs become similarly infected and finally the blade of the leaf bends, more or less, to a cup-shaped form, and in some cases the margin of the leaf closes over the central mass of insect and glands. Digestion now begins, the secretion has an acid reaction, the contents of the glandular cells change to various shaped purple masses floating in a nearly colorless liquid, and the liquefied material is slowly resorbed. The sensibility resides in the glands and possibly in the extreme upper portion. but not in the lower part of the hairs, nor in the leaves; irritation is not induced by water, sugar and other non-nitrogenous substances.

The effects of the leaves of the different species of Drosera appear to be alike; yet the motion must be modified by the shape of the leaf. The North American species Drosera filiformis coils its thread-like leaves around its prey, and an American lady, Mrs. Treat, has even shown (1873) that these leaves will bend towards an insect until it is reached, if the latter is pinned at a distance of about half an inch. The stalked glands of the Portuguese sundew Drosophyllum are incapable of movement, but nevertheless catch insects which by the secretion of sessile glands appear to be digested.

The third class of insectivorous plants comprises those which have pitcherlike receptacles into which the petioles or leaves have been wholly or partly transformed, and which have long been regarded as reservoirs of water, especially provided for the accommodation of birds and other animals. William Bartram, the son of the first American botanist John Bartram, and a native of a district near the Schuylkill now included in the city of Philadelphia, had resided for some years in Florida, and traveled in other southern states; in the work describing his travels, which was published in 1791, he showed the American pitcher plants, Sarracenia, to be veritable insect traps. But the function of these leaves of digesting animal food, was mainly elucidated through the labors of Burnett in 1829, and in 1874, by the English botanist, Hooker, and by Dr. Mellichamp of South Carolina. These pitchers vary in shape and organization. Some are fitted for catching the rain-water, which from others is wholly or partly excluded by the lid, and these secrete into the pitcher an abundance of liquid; some allure insects by their colors, others by a more or less abundant secretion of saccharine matter, and the escape of the insects is often prevented by stiff hairs pointing downward. The captured insects die inside the pitchers; the secretion appears, at least in some cases, to be destitute of digestive power and to rather hasten decomposition, and the leaves probably absorb the products of putrefaction, which according to the observations of Prof. Riley of St. Louis, afford also food for the larvæ of one or more flies. The Australian pitcher plant, Cephalotus, and the East Indian pitcher-plants of the genus Nepenthes, secrete digestive fluids, as was shown by Tait, Hooker, Reese, Mill and others.

Of other widely distributed bog and water plants, the true butterworts, Pinguicula, catch and digest insect in a similar manner as is done by Drosera; while the bladderworts, Utricularia, imprison in their floating vesicles small animals which are not digested, but apparently resorbed after putrescense has set in.

In conclusion, I may yet refer to some other plants, which though not known to be carnivorous, contain digestive ferments. Prominent among these is the tropical papaw, *Carica Papaya*, which has long enjoyed the reputation of rendering meat tender, and from which the pepsin-like ferment papain or papayotin was isolated in 1878. A similar ferment was found in 1880 by Bouchut, in the milk-juice of the common fig tree, and it has been shown that analogous compounds exist in a much larger number of plants than has hitherto been supposed. It is not unlikely that further researches may render such products valuable to man, either for economic purposes or for pharmaceutical or medicinal uses.

ALUMNI CALENDAR FOR 1885-86.

Thursday, May 7, 1885, First Meeting of the Executive Board.

Thursday, July 23, 1885, 2d Annual Excursion to Augustine Pier, by the Steamer Thomas Clyde.

Thursday, August 6, 1885, Second Meeting of the Executive Board.

Tuesday, October 15, 1885, First Social Meeting, 3 o'clock, P. M.

Thursday, November 5, 1885, Third Meeting of the Executive Board.

Tuesday, November 10, 1885, Second Social Meeting, 3 o'clock, P. M.

Tuesday, December 8, 1885, Third Social Meeting, 3 o'clock, P. M.

Tuesday, January 12, 1886, Fourth Social Meeting, 3 o'clock, P. M.

Thursday, February 4, 1886, Fourth Meeting of the Executive Board.

Tuesday, Feb. 9, 1886, Fifth and last Social Meeting, 3 o'clock, P. M.

Wednesday, March 7, 1886, Twentieth Annual Meeting of the Association, and Annual Reception to Graduating Class.

Senior and Junior Quizzes every Thursday afternoon, commencing October 8, 1885, and ending February 25, 1886.

Course in Microscopy begins Friday, October 19, 1885.

Spring Course in Microscopy commences Friday, April 2, 1886.

Introductory Lecture to the Course of 1885-86, Friday, Oct. 1, 1885.

Sixty-fourth Annual Commencement, Thursday, March 18, 1886, at 12 o'clock, noon.

VALEDICTORY ADDRESS

DELIVERED BY

Prof. SAMUEL P. SADTLER,

TO THE

GRADUATING CLASS, PHILADELPHIA COLLEGE OF PHARMACY,

AT THE

Academy of Music, Tuesday Evening, March 24th, 1885.

The passing forth from the halls of instruction of the Philadelphia College of Pharmacy of 147 additional young men, to whom the degree of Graduate in Pharmacy has been granted, is an occasion on the one hand for congratulation and on the other hand for serious reflection. Congratulation that the proportion of educated and trained workers in this field is so materially increased as over against the great army of irregular and uneducated empirics who are ready to dispense drugs and medicines with no greater feeling of responsibility than they would have in selling groceries. Reflection that, though this large number start forth with the same diploma and the same words of good cheer from us, not all will meet with equal success; some, indeed, will in all probability fail in their life's struggle either wholly or in such degree as to take them out of the pharmaceutical career into other means of earning a livelihood. We have then this evening the recurring of an event that brings mixed feelings to the mind of the teachers who bid farewell to a class of pupils whose faces have become familiar to them from continued association in the lecture-room and laboratory. We recall to mind the similar classes that for a series of years have gone out from our midst, and ask how are they doing now after five years, after ten years, or after fifteen years. The answer that would come to these inquiries would be very varied, recording occasionally great successes, oftener a steady though moderate growth in professional and business standing as a reward of faithful effort, and, alas, sometimes sad failures. Would it not be well for us this evening to spend a few minutes in considering whether any fairly defined general elements of success can be recognized by us in studying the experience of different men, and if so, what are they?

Success, using the word in a broad and general sense, is dependent in part upon clear and well-defined efforts made to achieve it, and in part upon surrounding circumstances. The unreflecting world is apt to put prominently among the latter what it calls chance or luck, and we often hear this explanation given of the prosperity or want of prosperity of an individual. "He always was a lucky fellow," they say, or in tones of commiseration explain to an acquaintance that "the poor fellow who just went under was born under an unlucky star." When, however, we learn the inside history of any particular case, and come to analyze the components in the results, we find that either very little can fairly be said to have been fortuitous, or, if there was a seeming chance occurrence, the effect of it upon the individual's future was largely controlled by his own self—his preparedness or unpreparedness to profit by good fortune or to stand up against adverse influences.

In the main a man must be the architect of his own fortunes. This plain axiom is so old and so trite—so constantly reiterated—that one would suppose that it had been universally accepted by this time, and that every young man was ready to make it the basis of his future action, not only to believe it, but to live it throughout his own career. How is it, then, that so many fail in accomplishing that success which we are taught to believe should reward them for their effort? Is it because fate is persistently adverse to them, or that they meet an unlucky current in life and go down before undeserved and irresistible bad fortune. We do not believe that in one case out of a hundred the cause is to be found in anything outside of the individual's own self or of agencies readily controllable by him.

Let us consider some of these causes and see in how far they connect themselves directly with the personal character of the individual. In the first place, he may be lacking in energy and force. He does not exert himself in the slightest to bring about what he would call good fortune. He may lack confidence in himself, and so hold back when others less well equipped press forward and profit by the opportunities that offer, or he may be constitutionally indolent—in plain words, lazy. How many men have we not all seen who have been wanting in enterprise for one or both of these reasons? How well we know the type of shiftless, indolent man who, when questioned as to his lack of effort, says: "What's the use? I couldn't do such things; it isn't in me." How can he tell what is in him until he adopts a different spirit and makes an effort in true earnest, not giving up before he has tried, but determined that what has been done can be done again, and that he will not consider the question of failure, but only how the success which he knows will come ultimately is to be brought about?

Let us suppose in the next place that through other agencies than his own what is called good fortune has visited him. Is he able to profit by it? Does it find him thoroughly prepared and equipped for the responsibilities that it will put upon him? He may be drawn into a position of prominence before the community, and a great field of usefulness and personal advantage seems to open out before him. Has he prepared himself during his months or years of waiting and struggling so that he can rise at once to the measure of the demands now made upon him? He has been hoping and longing for this success, but has he thought of the conditions in which it would place him if it came, and has he trained himself by such careful business habits, such study of the profession or avocation he has chosen, and its relations to life about him, such a looking ahead at the possibilities that have now become actualities, that he can profit by the favorable turn in affairs? If he has not, he will most likely after a brief moment of trial be pushed aside from this favorable position by one better qualified, and he cannot be certain that a like favorable opportunity will ever offer again.

"There is a tide in the affairs of men, which, taken at the flood, leads on to fortune, omitted, all the voyage of their life is bound in shallows and in miseries."

Again, good-fortune fairly earned and coming as the reward of faithful effort frequently proves to be other than a blessing. It spoils the man and he soon shows his inability to stand good-fortune. When working and waiting for success, he was sober, industrious and moderate in his views and desires. When success seems to have crowned his efforts he undergoes a change, it may be gradual, but none the less appreciable. He becomes the reverse of what he was. He forgets the methods whereby he brought himself forward to his present satisfactory condition, indeed, he despises them often as good enough for a struggling man, but beneath his newly-acquired dignity. He makes the mistake of supposing that the beginning of success necessarily involve its continuance and further development. He forgets, or never has taken the trouble to reflect upon the complicated conditions under which we live in modern society. Business competitions, slight changes in the currents of trade, a protracted dull season, any or all of these causes may rapidly reverse his good-fortune unless he is thoroughly on his guard and fortifies himself against them like a prudent man. He could find, no doubt, within the period of his business experience and in the ranks of his acquaintances, numerous melancholy illustrations of the truths of these inexorable laws if he took the trouble to reflect upon what happened about him, but he does not see that these cases have any lesson for him. He is ready to admit the general truth of these views and that the results exhibit plainly cause and effect, but he does not seem to believe that his case will follow any such law. Whether he is conscious of it or not he is counting on his own case being an exception to such an uncomfortable rule.

If the several causes just enumerated are of any assistance in explaining the failures of individuals, we can very easily point out what other methods must be followed if success is to be attained. Just as these reasons were very directly connected with the personal and individual character of the man, so the elements of success must be sought for in himself. He must show industry, faithful and persistent effort even in the midst of discouragement, and a firm belief in doing all that merits success, and he can feel assured that success will follow. Just when he cannot say, but let him leave no step untaken to earn it. "'Tis not in mortals to command success, but we'll do more, Sempronius, we'll deserve it."

And if it come, let him take it as a result that is capable of being logically traced to causes which are ascertainable, and let him remember that if those causes cease to be operative the result will no longer follow. In other words, when he ceases to deserve success and work for it, the strong probabilities are that it will leave him.

And now let us ask if any of these reflections are of value to you as young men about beginning for yourself the career of a pharmacist? This career that you have chosen is in many respects an anomalous one. It is a profession for which a scientific education is necessary, and it is equally a business in which practical commercial methods are to be followed. Is it because of this two-fold character an easy career? We are inclined to think not. We know of no career in which the elements of success that we have before noted need to be brought so distinctly into play as in this, in which unflagging industry, patient and persevering effort and a just appreciation of the necessity for constantly deserving success are so needed. Were it only a profession this would all be true, but the mercantile character which also attaches to it makes these qualities absolutely indispensable.

The business competition which the pharmacist experiences not only from those equally skilled and educated with himself, but from quacks, dealers in nostrums and general store-keepers, who think it a very simple thing to sell drugs, makes it necessary that the successful pharmacist should be little short of an Admirable Crichton. He must know everything, and be able to suggest the proper remedy for every difficulty, and, withal, be as modest as a maiden about it. If he is located in a large town or city he must have his business qualities sharpened and developed to the highest point in order to stand the competition and cutting to which he will be exposed. If in a small town or village, he has the chance of becoming, and indeed is expected to become, the handy-reference man of his community, who must hold himself ready to help everybody out of their difficulties and to practice emergency surgery upon man and beast at all hours.

Do not let the young pharmacist beginning his career, in either situation, think that he is going to succeed, as a matter-of-course, or by being "cuter," as it is termed, as those who went before him. The elements of success are the same for him as for others. He will prove no exception to the operation of general laws and must stand or fall accordingly as he respects them. Let him ponder upon the experience of the many thousands who have fought their way forward from the same starting point, and not be above profiting by their mistakes and learning what gave them success. So will he prove helpful to the community in which his lot is cast, and will himself in turn be appreciated and honored by it. He can achieve no truer success than to be universally recognized by all who come into business or social relation with him, as an absolutely honest, trustworthy, capable and reliable man. And the college that sends forth these young men to-day with its diploma can wish nothing better for their future than that just this judgment shall be passed upon them, and will esteem itself happy if it can be said to have contributed anything towards this result.

So, with these words your instructors bid you adieu and God-speed. Whether we may have future congratulations to offer, or only words of commiseration is chiefly a thing for you to determine. That it may be only the former we sincerely hope.

IMPORTANT NOTICE.

Any one wishing to purchase back numbers of the Alumni Reports for the purpose of completing the full set, can do so by applying to the Secretary, Wm. E. Krewson, No. 1829 N. Eighth St. Also, extra copies of this Report. Price 25 cents each. Those sending by mail should enclose *stamps* for postage. The money thus received is to be used for reprinting any of the Reports that may become exhausted.

COMMENCEMENT EXERCISES.

1885.

The Sixty-fourth Annual Commencement of the Philadelphia College of Pharmacy was held at the Academy of Music, on Tuesday evening, March 24, 1885, in the presence of a very large audience.

Promptly at 8 o'clock the Graduating Class marched across the stage and occupied the seats assigned to them in the parquet.

The Officers, Faculty and Members of the College and Alumni Association then followed and occupied seats upon the stage.

Prof. John M. Maisch then called the assemblage to order with the following remarks.

> LADIES AND GENTLEMEN:—We are assembled here this evening for the purpose of conferring the degree ot Graduate in Pharmacy upon one hundred and forty-seven young gentlemen, who have completed their studies at the Philadelphia College of Pharmacy. The class is but two less than the largest we ever graduated from this institution.

Prof. Maisch then called the roll of the Graduating Class, and as their names were announced they came forward upon the stage and encircled themselves around the Vice-President of the College, Mr. Chas. Bullock, Ph. G., who conferred the Degree of Graduate of Pharmacy (Ph. G.), upon them, as follows:

> GENTLEMEN:—You have given the necessary period of four years apprenticeship required by the Philadelphia College of Pharmacy in acquiring a knowledge of Materia Medica and Operative Pharmacy; you have attended two full courses of instruction in the school of the College, have undergone an examination by the faculty, and committee of the Board of Trustees, and have been deemed worthy of receiving the diploma of the College. Now, therefore, by direction of the Board of Trustees, by virtue of the power vested in them by the Commonwealth of Pennsylvania, I confer upon each of you the title of Graduate in Pharmacy, and as a token of your right to this title to the exercise of your profession, I present to each of you the diploma of the College.

Prof. Maisch announced that the Graduating Class represented twenty states, also Canada, Germany and Nova Scotia.

Prof. Jos. P. Remington announced that a number of prizes had been instituted by the College through its friends and the Faculty, and these would be awarded in the following order:—

And the First on this list is the Procter Prize. This is a prize of a gold medal, and is awarded to the student who shall, in the examination, have passed with the grade of very satisfactory in each branch, and shall have produced a satisfactory thesis. In the recent examination two of the members of the class complied with the requirements for this prize, and the Board of Trustees has decided to award two gold medals as Procter Prizes this year to the two students complying with the requirements.

It is awarded to Henry C. C. Maisch, of Pennsylvania, and William D. Deuschle, of Ohio, who will please step forward upon the platform.

The two young gentlemen stepped forward amidst thunders of applause, and Mr. Wm. J. Jenks, Ph. G., Chairman of the Committee on Examinations, then presented the medals, with the following remarks:—

The late William Procter, a gentleman connected with the College of Pharmacy, endowed the College with a sum of money, the interest of which was to be used for the purpose of procuring a medal or other suitable prize to be given to that student who shall attain the highest general average and pass a very satisfactory examination in all the branches taught, and present a meritorious thesis. The Faculty of the College has submitted your names to the Board of Trustees and the Committee on Examination for Candidates for Graduation, and they reported that both of you had fulfilled each of the requirements for this prize, and so uniform were the results of the examination that it became difficult to decide to which the prize should be given. The Committee, therefore, concluded that a medal should be given to each of you, and the Board of Trustees directed the award to be made. I now have the pleasure, in their behalf, of presenting to each of you the Procter Prize for that close application to study which elevated you to the highest ranks, and which will now be conferred upon you, so that in course of time you may be able to reach the high position attained by Professor Procter, who was one of the most honorable of American Pharmacists.

H. C. C. Maisch replied as follows:—In answer to the Board of Trustees, I would say, that I shall do my best to fulfil their wishes.

Mr. Deuschle said:—Gentlemen of the Board of Trustees, I thank you for the honor conferred upon me; I can only say that I shall always do what is in my power to render myself worthy of the honor thus bestowed upon me.

Prof. Remington then announced that the Henry C. Lea Prize of $100 would be presented to Henry C. C. Maisch, of Philadelphia, with honorable mention of Daniel H. Hassler, of Carlisle, Pa., Carl E. Schlegel, Davenport, Iowa, Geo. E. Hurd, of Wisconsin, and Jas O. Howells, Bridgeport, Ohio. Mr. Henry C. Lea, of this city, offered this prize to the student in the College who has presented the best thesis.

Mr. Maisch came forward upon the stage, and Mr. Wm. B. Thompson, of the Board of Trustees, presented the prize, with the following remarks:—

Gentlemen and Ladies :—At this point in the ceremonies this evening there has been assigned to me the pleasant duty, namely, that of presenting, in behalf of the Philadelphia College of Pharmacy and the Board of Trustees, the prize or award of merit called the Lea Prize. I present this to Henry C. C. Maisch, in consideration of his having originated and presented the most meritorious thesis upon a subject relating to science and knowledge (*Illicium Floridanum*, Ellis.)

The prize given by Mr. Lea to the College to award comes to you in conformity to his wishes, and in conferring this I desire, on behalf of the College, the Board of Trustees and your fellow-graduates, to congratulate you ; and I now make the presentation, with their best wishes.

Mr. Henry C. C. Maisch :—I return to the Board of Trustees my heartfelt thanks, and shall do my very best to merit the honor I have received.

Prof. Remington announced that the next prize to be presented was the Materia Medica Prize, being a Zentmayer Histological Microscope, presented by the Professor of Materia Medica and Botany, for the best thesis, showing the best histological and chemical examination of an American drug. This had been awarded to George Edward Hurd of Wisconsin, with honorable mention of Henry Scholey Saunders, London, Ontario, Canada, George E. Dennisson, Downingtown, Pa.

Professor Maisch then stepped forward and presented the microscope to Mr. Hurd, with the following remarks : "For the space of fifty years the use of the microscope has assumed considerable importance in the examination of drugs, and also in the examination of the histology of plants. There are quite a number of medicinal plants in this country, but a comparatively small number have yet been examined histologically, and a large majority of these moreover deserve a more intelligent investigation. The plant that you have chosen for your examination is, strictly speaking, not an American one, but it has been so thoroughly naturalized in nearly all parts of the United States, that it may now be recognized and claimed to be an American plant. In this investigation you have doubtless met with difficulties which, however, I am happy to say, you have overcome by patience, by industry, and by perseverance. It gives me a great deal of pleasure to say that you have faithfully earned this prize. and in presenting it to you, I wish to congratulate you upon your success, and to express the hope that in future time when you use it, it may be a remembrance of your college life in the Philadelphia College of Pharmacy, and may stimulate you, or at least aid you in the investigation upon the field upon which you have just entered ; I congratulate you."

Prof. Remington then announced, that the next prize in order is the Chemistry Prize. This is awarded by the Professor of Chemistry to the student producing the best thesis showing the most creditable work in analytical chemistry. This is awarded to Henry C. C. Maisch of Pennsylvania.

Prof. Sadtler then made the presentation to Mr. Maisch with the following remarks :—

Chemistry has been frequently called the right hand of Pharmacy. It seems, therefore, eminently proper that a young man who intends to pursue

Pharmacy as a profession, should cultivate Chemistry, especially analytical, qualitative and quantitative analysis, and excellent work has been done in these branches and evidenced by the thesis, and it has been found that your thesis was deserving of the prize.

Prof. Remington stated, that by the request of the Professor of Chemistry, he would state, that there were a number of theses presented upon chemical subjects which show very excellent work in that direction, and he desires that the following named gentlemen be awarded the distinction of honorable mention in this connection besides Mr. Maisch: Wm. Bichy, Buffalo, New York; Carl Edward Schlegel, Davenport, Iowa; James Owen Howells, Bridgeport, Ohio; Daniel Herr Hassler, Carlisle, Pa.; Albert Edward Brown, Mobile, Ala.

Prof. Remington then announced that the last prize that is awarded at this time is known as the John M. Maisch Prize of $20 in gold, and is offered by Mr. J. H. Redsecker, of Lebanon, Pa., for the best microscopical examination of sections of drugs. Mr. John George Engler, of Hartford, Conn., was the recipient of this prize with honorable mention of the following gentlemen: Henry Beckberger, Sandusky, O.; Wm. Bichy ,Buffalo, N. Y.; Wayne B. Bissell, Waterville, N. Y.; Henry Brandner, Jr., Atchison, Kas.; Oscar B. Deakyne, Wilmington, Del.; Wm. D. Deuschle, Chillicothe, O.; Wm. J. Laval, Evansville, Ind.; Henry C. C. Maisch, Philadelphia, Pa.; Paul E. Meissner, Milwaukee, Wis.; Edwin O. Moyer, Catasauqua, Pa.; and Emil Schaible, La Fayette, Ind.

Mr. Engler then came upon the stage, and Prof. Maisch addressed him as follows:—

Mr. Engler, Materia Medica is by some considered to be a rather dry subject [applause], but those who hold such an opinion certainly have no knowledge of the beauties that are revealed by means of the microscope. During your sojourn here you have not only studied Materia Medica in this light, that you have merely looked and examined the drugs—the outside appearance of the drugs—but you have also examined their structure, and in the competitive examinations that are held you not only not merely recognized relatively the largest number of microscopical specimens of drugs that were placed before you at the same time with a number of other thoughtful students, but I am pleased to say that at the first call you recognized every one that was placed before you. Now, the prize offered by Mr. Redsecker is awarded to one of those students who show excellency in the examination of Materia Medica, and who afterwards subsequently have to undergo further examination in the microscopy of drugs. I am happy to say that this prize has been very well earned, and in presenting it to you I wish to congratulate you upon your success, and express the hope that it may not be the last time that you have looked through a microscope. I am sure that will not be the case.

Mr. Engler replied:—

Prof. Maisch:—In accepting this honored reward I thank you, and I hope I may always be prompted by it, and that it may prove an incentive to me in all my studies and in whatever work I may undertake. I wish also to express my sincere thanks to the donor of this prize, Mr. Redsecker.

Prof. Maisch then announced the following students as having been awarded honorable mention, the general result of their examination having given them the grade "Distinguished."

Henry Beckberger, Sandusky, Ohio; Henry Brandner, Jr., Atchison, Kas.; Wm. D. Deuschle, Chillicothe, Ohio; Jas. O. Howells, Bridgeport, Ohio; Grant Elmer Kirk, Philadelphia, Pa.; Wm. John Laval, Evansville, Ind.; Henry C. C. Maisch, Philadelphia, Pa.; Robert B. Matter, Lewistown, Pa.; Paul E. Meissner, Milwaukee, Wis.; Edgar H. Naudain, Wilmington, Del.; also the following with the grade of "Meritorious:" Wm. Bichy, Buffalo, N. Y.; Wayne B. Bissell, Waterville, N. Y.; Oscar B. Deakyne, Wilmington, Del.; John Geo. Engler, Hartford, Conn.; Silas M. Harrington, Plano, Texas; Henry E. Heinitsh, Philadelphia, Pa.; Chas. N. Lochman, Bethlehem, Pa.; Edwin O. Moyer, Catasauqua, Pa.; John W. Newton, Gallipolis, Ohio; Emil Schaible, La Fayette, Ind.; Carl E. Schlegel, Davenport, Ind.; Herman J. Schuchard, San Antonio, Texas.

Prof. Saml. P. Sadtler then delivered the Valedictory Address. (see page 142.)

The music was furnished by the Germania Orchestra, under the supervision of Geo. Bastert, Conductor.

The front of the stage was filled with floral offerings and gifts of various kinds, tendered the graduates by their friends, among them were many valuable gifts. Several of the former graduates of the College rendered efficient service in the distribution of the gifts, and amid the sweet strains of the music the audience dispersed to their various places of abode, with the recollections of an enjoyable evening spent.

THE FACULTY'S ANNUAL COMPLIMENTARY SUPPER

Was given to the Graduating Class, on Monday evening, March 23d, in the museum of the College. The hall was tastefully decorated, and the tables were well filled with the good things of the season. Most of the officers of the College and members of the Board of Trustees were present. Prof. John M. Maisch, the Senior Professor, presided at the table. After all had partaken of the good things, and the inner man was fully satisfied, every one awaited to enjoy the speeches that are usually made upon occasions like this.

Prof. Maisch proposed the first toast—"The Philadelphia College of Pharmacy," which was responded to by the First Vice-President, Chas. Bullock.

The second—"Our Sister Colleges of Pharmacy," which was responded to ably by Mr. Shepherd, of Boston, Mass., and Prof. Wm. Saunders, of the Ontario College of Pharmacy.

Mr. Robt. W. Woodill, a member of the Graduating Class, then arose and presented the portrait of Prof. Henry Trimble, on behalf of the Graduating Class, to the College, with the following remarks:—

> The time is now near at hand when this Class shall separate, to meet no more forever, and the pleasant and instructive hours spent beneath this roof shall have passed into the domains of memory. We, the members of the Class shall need no reminder of those days, nor of the happy relations which have existed between this Class and the officers of the College. But we feel that we should like to leave something behind which shall call to memory this Class when other Classes have taken its place. The Zeta Phi Society has requested me to present to the College, on behalf of the Class, this picture. It has been chosen jointly as a memento of this Class, and also as a token of our appreciation of one of the preceptors of the College—one who has ever shown a true interest in the student, and by his gentlemanly and unassuming bearing and ever-consistent conduct, has won the highest esteem of every member of this Class. May the College long continue to enjoy his valuable services, and when a fitting opportunity occurs we trust that he will receive the promotion which he so well merits. I have great pleasure in presenting the portrait of Prof. Henry Trimble.

Mr. Bullock accepted it on behalf of the College with appropriate remarks.

Alfred C. Wood, of the Graduating Class, then presented Prof. Jos. P. Remington with a group, on behalf of the Theta Delta Sigma Society. Prof. Remington responded feelingly, thanking the society for this mark of their appreciation.

Mr. Geo. M. Smith, on behalf of the class, then presented to the college the portrait of C. Fred'k Zeller, Ph. G., Assistant to the Chair of Pharmacy, with the following remarks:

> MR. BULLOCK:—On behalf of a large number of the members of the Class of 1884 and '85, I take pleasure in presenting to the college this portrait of the Assistant Professor in Pharmacy, C. Frederick Zeller. A gentleman too well known and beloved by the members of this Class to require any eulogy at my hands. It is a great source of regret, that owing to continued ill-health, we have been deprived of his valued services during the past term, but we hope that the return of the gentle breezes of spring and summer will restore to him life and health. Trusting that the Philadelphia College of Pharmacy may soon welcome him back with returned health, I beg that you will accept this testimonial of our appreciation of his labors in our behalf.

Mr. Bullock accepted it for the College with feeling remarks, and thanking the Class for the donations.

Short addresses were then made by Wm. J. Jenks, the genial Chairman of the Examining Committee, Wm. C. Bakes, Secretary of the Board of Trustees, Prof. Sadtler, Mr. Thos. S. Wiegand and many of the students. Among the latter were Jas. O. Howells, of Ohio, John Geo. Engler, of Connecticut, John W. Newton, of Ohio, A. B. Hammond, of Baltimore, Md., A. L. Serfass, of Easton, Pa., Carl E. Schlegel, of Iowa, Wm. F. Harper, Secretary of the Zeta Phi Society, Albert E. Brown, of Alabama, H. C. C. Maisch, of Philadelphia, Geo. H. Eberling, of West Virginia, and Fred'k A. Tifft, of Camden, N. J.

Chas. C. Ramey gave a poem, and Albert A. Patterson was called upon for a song.

This closed the programme for the evening; and, after the singing of several popular songs, such as "Away down upon the Suwanee River," "Where the Old Folks Roam," and "No Place like Home," and "Hang Sulphuric on a Sour-Apple Tree," the festivities were brought to a close, and the Class of '84 and '85 dispersed, never to meet again as a Class.

Edward C. Jones, son of Wm. and Jane P. Jones, was born on 5th St. near Market, Philadelphia, Pa., August 26, 1843—his parents being strict members of the Society of Friends—being of delicate health in childhood, he was sent to Friends' select school, Philadelphia, where he received his early training, and finished his education at West Town Boarding School, Chester Co., Pa. September 6, 1860, he went to learn the drug business with Amos H. Yarnall, S. E. cor. 15th and Market streets, and remained there four years; during his apprenticeship he attended the Philadelphia College of Pharmacy, and graduated in March, 1864, being second in his class. During this same year the Alumni Association of the Philadelphia College of Pharmacy was organized, and Mr. Jones was one of its projectors, and through his untiring efforts and perseverance her prosperity is due to-day. In 1868 he was elected Treasurer of the Association, and has filled that honorable position ever since—17 years. In 1864 he became a member of the American Pharmaceutical Association, and was present at the meeting held at Cincinnati, Ohio, and has frequently represented the Association in that body. In 1866 he joined the Philadelphia College of Pharmacy, and has continued in active membership ever since, and is at present one of the Trustees, having occupied that position for several years, always a faithful and zealous advocate of every improvement for the advancement of the College's interest. He is also a member of the Pennsylvania Pharmaceutical Association, Zeta Phi Alpha Society and Drug Trade Association of Philadelphia, in which he takes a lively interest.

After his graduation, in 1864, he went to Chicago, Ill., and spent a short time in the laboratory of E. H. Sargant, and afterwards in the drug store of W. J. M. Gordon, Cincinnati, Ohio, but his health failing him, he returned to his native city and went into business with his former preceptor, at the old established store, S. E. cor. 15th and Market streets. In 1877 his partner, Mr. Yarnall, died, when Mr. Jones succeeded him as the head of the firm of Jones & Shaw, and later E. C. Jones & Co., and continues until the present day.

MINUTES OF THE SIXTH ANNUAL MEETING

OF THE

ZETA PHI ALPHA CHAPTER, P. C. P.

The Sixth Annual Meeting of the Chapter was called to order at 10.30 A. M., Thursday, March 19, 1885, President French in the chair.

Forty-nine members signed the roll during the session.

As a number of applicants for fellowship were in waiting, Fellow Weidemann moved that the regular order of business be suspended, and the Chapter proceed to an election and initiation of new members, which was agreed to.

The application of William F. Harper, S. Ross Crothers, J. W. Newton, J. Geo. Engler, Henry C. C. Maisch, of the Class of '85, and David H. Ross, Class '78, were then presented, properly recommended, and referred to Fellows Lowe, Stem and Weidemann, who having reported favorably in each case, the Chapter proceeded to ballot for the candidates, the result of which was their unanimous election.

The Chair appointed Fellow Krewson Master of Ceremonies, with Fellow Lowe assistant, Fellow Potts as Sir Herald, with Fellows Proctor, Maisch, Weidemann and Matthies assistants, Fellow Clayton, Inner Guard, and Fellow E. C. Jones, Outer Guard.

There being eight candidates in waiting, Frank Gibbs Ryan, elected in 1884, and Wm. M. Miller, Class of 1880, having arrived, a special dispensation was asked and granted to initiate them all at once. They stood the ordeal with great fortitude, and were finally pronounced fully-fledged Fellows of the Order.

The regular order of business being resumed, the minutes of the last annual meeting were read and approved; the minutes of the several meetings of the Executive Council were read and approved.

On motion, at 12 o'clock the Chapter took a recess until 2 P. M.

The afternoon session convened at 2.30 P. M.

The reports of committees being in order, the report of the Committee on Ritual was received, and the ritual for initiations, which had been read and tried at the morning session, was adopted.

The Committee on Reimbursement of the Banquet Committee of 1882, reported progress and was continued.

The Banquet Committee reported progress, and hoped that the members and their friends would appreciate the result of their labors in the evening.

The applications of the following nineteen candidates, properly recommended, were then read and referred:

Wm. A. Vannort, '85; Edw. H. Fienhold, '85; Harry Lee Barber, '84; Oscar B. Deakyne, '85; Jas. Edw. Wright, '85; Edwin H. Hess, '85; Fred. H. Davis, '85; Benj. Rosenweig, '85; J. H. Hagenbuch, '85; Jos. M. Malatesta, '85; Fred. P. Sher, '85; Theo. Feairheller, '85; Chas. C. Ramey, '85; Jas. A. Kyner, '85; Jos. J. Eldredge, '85; G. H. Ebeling, '85; Wm. B. Gleim, '83; Albert H. Smith, '77; and Rob't B. Matter, '85.

A favorable report having been received from the committee, the candidates were balloted for and unanimously elected,

Messrs. Vannort, Deakyne, Wright, Hess, Davis, Rosenweig, Hagenbuch, Sher, Gleim, Smith, Ebeling and Matter, were then initiated into the mysteries of the order with imposing ceremonies.

The President's Annual Report was then read, and on motion accepted and ordered to be spread upon he minutes.

The Treasurer's Report was then read and referred to an auditing committee composed of Fellows Potts and Lowe, who having reported it correct, it was ordered to be spread upon the minutes.

The Secretary then read his report, which was accepted and ordered to be spread upon the minutes.

Mr. Edw. H. Fienhold was then received into fellowship with the usual ceremonies.

Bills of Craig, Finley & Co., for four dollars and twenty-five cents, C. B. Lowe, sixty cents, and the Secretary's account for postage, &c., seventeen dollars and seventy-four cents, were then presented and ordered to be paid.

Fellow Proctor presented the chapter with a wooden mortar and pestle, to be used in the initiation ceremonies.

On motion of Fellow Potts, a vote of thanks was extended to Fellow Procter for his gift.

The application of A. Lincoln Serfass, '85, was received and approved by the regular committee, and the candidate elected.

Messrs. Serfass, Malatesta and J. J. Eldredge, were then duly initiated with the usual pomp and grandeur.

The chapter then proceeded to elect officers to serve for the next three years, the result being as follows:

President—Geo. W. Kennedy, '69, Pottsville, Pa.

First Vice-President—Wm. E. Krewson, '69, 1829 N. Eighth Street, Philadelphia.

Second Vice-President—Wallace Proctor, '72, 900 Lombard Street, Philadelphia.

Treasurer—Chas. W. Hancock, '57, 3425 Spring Garden Street, Philadelphia.

Secretary—Henry A. Newbold, '70, 4060 Chestnut St., Philadelphia.

Chaplain—Rev. Jas. C. Craven.

Executive Council—

Thos. H. Potts, '71, Philadelphia.
Jos. L. Lemberger, '64, Lebanon, Pa. } 3 years.
Howard B. French, '71, Philadelphia.

C. B. Lowe, '84, Philadelphia (for the unexpired term of Wallace Proctor, elected Second Vice-President.)

On motion the chapter then adjourned.

HENRY A. NEWBOLD,
Secretary.

The Third Triennial Banquet of the Zeta Phi Alpha, was held in the museum of the College, on the evening of March 19th, and was a great success. About one hundred and thirty persons, members and representatives of the wholesale and retail drug trade, with their wives and friends, sat down to a bountiful repast about half-past eight o'clock.

Howard B. French, the retiring President of the Chapter, presided, and Thos. H. Potts acted as toast master.

The toasts were responded to as follows: "Our Alma Mater," by Chas. Bullock. "Our Faculty." by Prof. J. M. Maisch. "The Alumni Association," by Dr. A. W. Miller. "The Zeta Phi Alpha," by Howard B. French. "The Graduating Class," by Prof. Sadtler. "The Wholesale Trade," bv M. N. Kline. "The Retail Trade," by Jas. T. Shinn. "The Ladies," by Prof. Remington.

The company dispersed about midnight, very well pleased with their entertainment.

The Committee in charge of the Banquet, was Howard B. French, Wm. E. Krewson, Thos. H. Potts, Albert P. Brown and Henry A. Newbold.

A Special Meeting of the Executive Council was held in the Chapter Rooms, March 24th, at 11.30, A. M., the morning of Commencement Day. Vice-Pres. Krewson presided.

The only business before the Council was the election and initiation of new members.

The applications of Jos. C. Roberts, Wayne Bissell, J. Lewis Nebinger, J. F. Windolph, properly recommended, were referred to the usual committee and reported on favorably, and the applicants elected to membership. Messrs H. L. Barber, Theo. Feairheller, J. A. Kyner, C. C. Ramey, with those just elected, were then initiated with all the mysterious ceremonies usual upon such occasions.

There being no further business, the Council then adjourned

HENRY A. NEWBOLD,
Secretary.

NOTICE.

It is the desire of the officers of the Alumni Association that each member receives a copy of the Annual Reports from year to year. It is therefore hoped that each member will inform the Secretary by postal when he receives this number.

EXCURSION.

Of Alumni Association to Augustine Pier, by Steamer "Thomas Clyde," Thursday, July 23, 1885. Tickets, 25 and 50 cents.

In Memoriam.

List of Deceased Active Members of the Alumni Association, as far as known.

Needles, Caleb H.,	Class	1841,	died at	Philada., Pa., Oct. 10, 1884.
Patrick, Geo. W., M. D.	"	1846,	"	Terre Haute, Ind., in 1874.
Stratton, James,	"	1851,	"	Bordentown, N. J., Mar. 23. 1883.
Selfridge, Mathew M.,	"	1852,	"	Philada., Pa., May 23, 1881.
Watson, Wm. J.,	"	1853,	"	Brooklyn, N. Y., in 1872.
Barr, Thomas H.,	"	1854,		
Leamy, James C.,	"	1855,		
Bringhurst, Ferris,	"	1857,	"	Wilmington, Del., Mar. 16, 1871.
Heydenreich, Victor F.,	"	1858,	"	Brooklyn, May 4, 1879.
Seegar, Roland,	"	1859,		
Rhodes, Elam M. D.,	"	1861,		
Fisher, Theophilus, M. D.,	"	1862,		
Mullen, Wesley W.,	"	1862,	"	Philada., Pa., Nov. 27, 1880
Leslie, Henry W.,	"	1862,	"	Parker's City, Feb. 14, 1883, of softening of brain.
Rohrer, Earl Penn,	"	1863,		
Eldridge, Geo. W.,	"	1863,	"	Philadelphia, June 25, 1885, suddenly, of heart disease.
Jones, Samuel T.,	Class	1864,	"	Philada., Pa., Mar. 14, 1880, of Bright's disease of kidneys.
Gold, Hiram, M. D.	Class	1864,	"	Philada., Pa., July 12, 1882.
Keen, Francis,	"	1865,		
Rubencam, Chas. E.,	"	1865,		
Wendel, Frederick W.	"	1865,	"	Philada., Pa., May 5, 1871, typhoid fever.
Barnitz, Frank M.,	"	1866,		
Shoemaker, Chas.,	"	1866,	"	Wilmington, Del., Feb. 1, 1872. Drowned in Christiana Creek while skating.
Milleman, Philip L.,	Class	1866,	died at	Chicago, Ill., May 8, 1884.
Corbridge, John E., Jr.,	"	1868,		
Eayre, Mortimer H.,	"	1868,	"	Duluth, Minn.
Hoagland, Pratt R.,	"	1868,	"	Boston, Mass., in 1883.
Shropshire, James B.,	"	1868,		
Simes, Samuel F.,	"	1868,	"	Philada., Pa., Jan. 10, 1881.
Shugard. Benj. F.,	"	1868,	"	Georgetown, Col., May 28, 1882.

Bowman, Henry K., Class 1869, died at Philada., Pa., Dec. —, 1873.
Davis, Aaron R., " 1869,
Fritchey, James G., " 1869, " Mechanicsburg, Pa., Nov. 4, 1871, of consumption.
Kolp, Christopher H., " 1869, " Philada, Pa., Feb. 11, 1879, of rheumatism.
Hannaman, John B., " 1870,
Stretch, Charles F., " 1870,
Lee, Charles S., Class 1870, died at his residence, No. 2127 Berks street, April 1, 1885, aged 37 years and 2 months, of apoplexy.
Bolton, Charles F., Class 1871, died at Philada, Pa., July 20, 1879, of typhoid fever.
Alvarez, Miguel Y. Ortis, " 1873,
Parker, James A., " 1873, " Colorado Springs, Mar. 4, 1884, of consumption.
Ritter, Eugene D., " 1873, " Philada, Pa., Mar. 1, 1884, of typhoid pneumonia.
Schnabel, Charles, " 1873,
Jefferson, Edward L., " 1873, " Atlanta, Ga., Aug. 17, 1884.
Williams, John L., " 1874, " Bloomfield, Pa., Sept. 4, 1884.
Jacobs, George Harris, " 1874,
Brown, Frank Pierce, " 1875,
Marston, Jas. A., " 1875, " Philada, Pa., Sept. 16, 1882, of consumption.
Conrath, Frank, M. D. " 1875, " Milwaukee, Wis., May 15, 1884.
Witmer, John A., " 1876, " Las Vegas, New Mexico, Dec. 29, 1884.
Stockton, Wm. Wood, " 1876, " Huron, Da., Apr. 27, 1884.
Moore, C. W. Frank, " 1877, " Northeast, Md., July 15, 1884.
Koehler, Walter W., " 1877, " Philada., Pa., Feb, 21, 1880.
Hendricks, Elwood G., " 1878, " Worcester, Montgomery Co., Pa., Aug. 30, 1880, consumption.
Peat, Edward, M. D., Class 1878, " Delphos, Ohio, Apr. 19, 1883, acute consumption.
Elkins, Chas. Wm., " 1880, " Philada, Pa., Nov. 1, 1882, consumption.
Wolf, Simon E., " 1882, " Harrisburg, Pa., May 28, 1882; typhoid pneumonia.
Seitz, John George, Class 1882, " Cleveland, O., June 21, 1885.
Neuhart, Lawrence Aug., " 1883, " Columbus, O., June 7, 1883.
Bollman, Curtis J., " 1884, " Mansfield, O., Nov. 15, 1884.
Finck, Robert F., " 1884, " Philada., Pa., Dec. 10, 1884.

In order to have the above record complete, it is desired that those who have any information in regard to dates or cause of deaths of any of the above will communicate the same to the Secretary.

MEMBERS BY RESOLUTION.

Simes, Samuel, Class 1833, died at Philada, Pa., March 6, 1885.
Smith, Ambrose, " 1834, " Darlington, Md., July 15, 1884.
Trimble, Joseph, " 1834, " West Philada., July 30, 1884.
Goodyear, John, " 1837, " Philada., Pa., June 15, 1884.

The following deaths of graduates of the Philadelphia College of Pharmacy have been reported since our last report was issued, and were not members of the Alumni Association:—

Seymour Snowden Burns, Class of 1878, of Minersville, Pa., died at Pottstown, Pa., Sept. 25, 1884, of typhoid fever; aged 27 years.

John P. Binns, Class of 1882, died in Philadelphia, Pa., Dec. 2, 1884, aged 24 years, of consumption.

John H. Palethorp, M. D., Class of 1854, died suddenly in Philadelphia, Dec. 20, 1884, of heart disease.

Edward Zeitler, Class of 1858, died in Philadelphia, Pa., March 3, 1885, of consumption. He was in active business at the corner of Richmond and Crease streets.

Robt. W. Dickson, Class of 1862, died in Philadelphia, March 18, 1885, of cirrhosis of the liver; aged 44 years.

Horace H. Owen, Class of 1880, died in York, Pa., April 9, 1885, of typhoid fever; at the time of his death was in business on Race street above Eleventh, Philadelphia.

Frederick Loose, Jr., M. D., Class of 1880, was drowned in the Schuylkill River, near Philadelphia, while bathing, June 17, 1885; aged 25 years.

Arthur E. Lewis, Class of 1880, of Scranton, Pa., died at Santa Barbara, Cal., April 1, 1885, of consumption; aged 25 years.

DEATHS OF PROMINENT DRUGGISTS OF PHILADELPHIA NOT GRADUATES.

Isaac H. Kay, died Aug. 7, 1884; aged 54 years.

Joel S. Harris, died Oct. 15, 1884; aged 34 years and 3 months.

Essex P. Camp, Feb. 16, 1885, at his residence, 1015 Columbia avenue.

John Moffett, died ———, at his residence 1614 North Second street.

Edwin Ball, died ———, at his residence, cor. Twenty-fourth and Lombard streets.

ALUMNI ASSOCIATION.

The Alumni Association was organized in 1864, to bind the graduates together, to keep alive their interest in the Philadelphia College of Pharmacy, and to stimulate the students to greater diligence in their studies by means of prizes and social meetings. It is the desire of the Alumni that all graduates should apply for certificates of membership. They also desire to obtain the correct address of every graduate. Direct all communications to W. E. Krewson, Secretary, No. 1829 N. Eighth street, Philadelphia.

List of Students who took the Quizzes under the auspices of the Alumni Association, Session of 1884-85.

SENIORS.

Bechberger, Henry, Sandusdy, Ohio.
Bichy, William, Buffalo, N. Y.
Bissell, Wayne Barker, Waterville, N. Y.
Bozenhard, Wm. Theodore, Dayton, Ohio.
Brandner, Henry, Jr., Atchison, Kansas.
Burke, Wm. Thompson, Bristol, Pa.

Cadmus, Robert Clark, Philadelphia, Pa.
Cooley, James Sherman, Flemington, N. J.

Davis, Fred'k Horace, Camden, Del.
Davison, Blythe James, Canton, Pa.
Deakyne Oscar Boone, Wilmington. Del.
Denniston, Wm. Milliken, Hollidaysburg,Pa.
Deuschle, Wm. Dilk, Chillicothe, Ohio.
Dickson, Morton Phelps, Media, Pa.
Dielman, Louis Henry, New Windsor, Md.
Dunn, Frederick, Philadelphia, Pa.

Ebeling, Geo. Henry, Wheeling, W. Va.
Eberly, Jabob Addison, Mechanicsburg, Pa.
Eisenhart, Foster Benj., Hellertown, Pa.
Engler, John Geo., Hartford, Conn.

Fahey, Edward H., Wilmington, Del.
Fienhold, Edward Henry, Philadelphia, Pa.

Gebhard, Adolph Emil, Muskegon, Mich.
Gehris, Peter Spang, Reading, Pa.
Green, Benj. Wallace, Millington, Md.
Griffen, Cyrus Byer, Lewisburg, Pa.

Haffa, Geo. Adam, Philadelphia, Pa.
Hagenbuch Jos. Hervey, Mahanoy City, Pa.
Hammond, Arthur Browne, Baltimore, Md.
Hamilton Will S. Fairmont, W. Va.
Harper, Wm. Franklin, Madison, Ind.
Harrington, Silas Marion, Plano, Texas,
Hassler, Daniel Herr, Carlisle, Pa.
Heinitsh, Henry Ernst, Philadelphia, Pa.
Hess, Edwin Hutter, Harrisburg, Pa.
Howells, James Owen, Bridgeport, Ohio.
Hunter, James Stanton, Pittsburgh, Pa.

Kalteyer, Moritz, San Antonio, Texas.
Kuehnel, Gustav Frank, Milwaukee, Wis.
Kyner, Jas. Almer, Orrstown, Pa.

Lautenbacher, Irvin L., Schuylkill Haven,Pa.
Laval, Wm. John, Evansville, Ind.

Lewis, Llewellen Hughes, Chester, Pa.
Lochman, Chas. Napier, Bethlehem, Pa.

McFarland, Thaddeus Day, Hudson, Ohio.
Mauch, Chas. Milton, Jr., Hellertown, Pa.
May, Rollin R., Wilmington, Del.
Meissner, Paul Ernst, Milwaukee, Wis.
Moore, John Demuth, Wrightsville, Pa.
Morrett, Wm. Henry, Mechanicsburg, Pa.
Moses, Matthew U. S. Grant, Trenton, N. J.
Mount, Elmer Marshall, Wilmington, Del.
Moyer, Edwin Oliver, Catasauqua, Pa.

Naudain, Edgar Herman, Wilmington, Del.
Newton, John W., Gallipolis, Ohio.

Odenwelder, Harry S., Easton, Pa.

Patterson, Albert Raymond, Zanesville, O.
Peters, Leopold, Fulton, Ill.

Reagan, Dennis, Easton, Pa.
Rebner, Chas. Morris, Atchison, Kansas.
Reinnoldt, Henry Otto, Sheboygan, Wis.
Riggs, Elias Ellsworth, Heightstown, N. J.
Roberts, Jos. Cattell, Wilmington, Del.
Rosenzweig, Benj., Philadelphia, Pa.

Saunders, Henry S., London, Ont., Canada.
Schaible, Emil, La Fayette, Ind.
Schlegel, Carl Edward, Davenport, Iowa.
Schofield, Allen Curtis, Piqua, Ohia.
Schuchard, Herman J., San Antonio, Texas.
Serfuss, Abraham Lincoln, Easton, Pa.
Smith, Geo. Mark, Annville, Pa.
Stiles, Harry Lippincott, Moorestown, N. J.
Stoll, Sam'l Franklin, Bucyrus, Ohio.
Swain, Harry, Georgetown, Del.

Thompson, Wm. Cochran, Coatesville, Pa.
Trefry, Thos. C., Yarmouth, Nova Scotia,

Van Buskirk, Sam'l Levick, Bethlehem, Pa.
Vannort, Wm Augustus, Hainesville, Md.
Von Achen, Frank Herman, Peoria, Ill.

Wegener, Henry, Oshkosh, Wis.
Weisel, Benjamin F., Elizabeth City, N. C
Williams, Neri Barndt, Easton, Pa.
Wood, Alfred Conard, Hatboro, Pa.

JUNIORS.

Birt, Frank John, Trenton, N. J.
Buckley, Jas. E., New Tacoma, Wash. Ter.
Cheney, Walter B., S. Manchester, Conn.
Ferguson, James Adams, Philadelphia, Pa.
Fletcher, Oscar Conrad, Franklin, Ky.
Goodman, Oscar Peter, Omaha, Neb.
Grant, James Smith, Frostburg, Md.
Grigg, Wilmer, Greensboro, Ala.
Hall, Harry N., Aguas Calientes, Mexico.
Hall, Willey Harrison, Fairmont, W. Va.
Holberg, Ferdinand, Macon, Miss.
Jones, Sam'l Stephen, Wilkesbarre, Pa.
Kelly, Wm. Daniel, St. Paul, Minn.
Loughridge, Sam'l S., Philadelphia, Pa.
McClananhan, John Thos., Galveston, Texas.
McNeil, Robert Carson, Philadelphia, Pa.
Meek, Wm. Henry, East Douglass, Mass.
Neil, Wm. Edgar, Moundsville, Wis.
Ohl, William, Peoria, Ill.
Ranftle, Oscar, Long Island City, N. Y.
Richter, Gustav. A., Philadelphia, Pa.
Shead, Almon Ami, Milwaukee, Wis.
Stevenson, Wellington, Aiken, S. C.
Strunk, Lewis Curtin, Quakertown, Pa.
Wallace, Edwin Corby, Springfield, O.
Ware, Wm. Reed, Atlanta, Ga.
Wayman, John Martin, Wheeling, W. Va.
Wiedmayer, Fred'k Wm., Leetowin, O.
Wilson, George Thos., Franklin, Ky.

CLASS IN MICROSCOPY.

Bichy, Wm., Buffalo, N. Y.
Breniser, Edgar, Reading, Pa.
Cahill, Daniel Wm, Watertown, N. Y.
Davis, Fred'k Horace, Camden, Del.
Fisher, Jacob L., Punxsatawney, Pa.
Jones, Samuel S., Wilkesbarre, Pa.
Kelly, Wm. Daniel, St. Paul, Minn.
Meissner, Paul Ernest, Milwaukee, Wis.
Roberts, Bolivar, Jr., Salt Lake City, Utah.
Saunders, Henry S., London, Ont., Canada.
Sprissler, O. A., Philadelphia, Pa.

SPRING COURSE, 1885.

Ferguson, Jas. Adams, Philadelphia, Pa.
Kuehnel, Gustav. F., Milwaukee, Wis.,
Stahler, Harry L., Norristown, Pa.
Wood, Alfred C., Hatboro, Pa.

Letters received from older graduates who were unable to attend the Annual Meeting and Reception, published as per resolution of Annual Meeting. See page 18.

Forest Hermitage, near Starke,
Bradford Co., Fla.,
March 8th, 1885.

Wm. E. Krewson, Ph. G.:—

Dear Sir:—Your card of invitation to the Reception of the Sixty-fourth Graduating Class of the Philadelphia College of Pharmacy by the Alumni Association, was received last evening, and I thank you for the compliment, though I regret to say that it will be out of my power to attend. I should be gratified to meet the Alumni of my old Alma Mater and her young graduates, and recall the joyful sensations of more than a half century ago, when I was, as they are now, in the heyday of youth and happy anticipations. I suppose that I am one of the oldest surviving graduates, being of the Class of 1834, though my venerable brother-in-law, Samuel F. Troth, is older, being a graduate, I believe, of the First Class. Although after my graduation I abandoned the practice of pharmacy for that of medicine, I have always felt an interest in the profession and business, and am gratified whenever I see an advance in its knowledge and an improvement in the intelligence and conduct of its members. Last summer, when I visited the North, I went to your new College, which is far more elaborate and perfect than the old building in Zane street, where my beloved brother (who died a few months since) and myself graduated. Thanking you for your invitation, and with an earnest hope for the continued prosperity of the College and of your Association, I am very respectfully yours,

D. B. Trimble,
Class 1834.

Germantown, March 7, 1885.

WM. E. KREWSON, *Secretary:*—

DEAR SIR:—I acknowledge receipt of the kind invitation from the Alumni Association, and regret that I am unable to attend. It gives me a great pleasure to hear of the success of the Association, and of any other branch of the dear old Alma Mater; and although I cannot be present to greet the younger members—for there are many of the older who have left us since 1842 (my graduating year)—yet I assure you I view with a pardonable pride the vast strides our beloved College of Pharmacy has made since my first membership under Bache, Carson and their compeers; and I know and feel that, under the fostering care of the present officers and members, our College will continue to advance in the bright path of science and knowledge under the skilful guidance of the well-selected Professors who at present constitute its staff. I cannot help comparing the present of pharmacy with its modest pretensions when I graduated, and offer the heartfelt wish that its future advance may still offer a further bright comparison, commensurate with its past attainments. With personal respects to yourself, I remain, very respectfully,

W. HENRY SCHIVELY, Ph. G.,
Class 1842.

Rensselaer, Ind., March 9, 1885.

WM. E. KREWSON, *Secretary*, Phila., Pa.:—

DEAR SIR AND BROTHER:—I greatly regret that I cannot be present on the evening of March 20th at the Annual Reception of the Sixty-fourth Class of our College of Pharmacy. Although many miles between us, yet the pleasant halls of the Alumni shall never be forgotten. I will wish you a pleasant meeting, and hope to meet you, as well as many others of my Class (1870 and 1871), some time in the near future. I desire to be remembered to our Prof. Maisch and Edward C. Jones, Treas.

Very respectfully,
EMMET KANNAL,
Class 1871.

Baltimore, March 9, 1885.

WM. E. KREWSON:—

DEAR SIR:—I thank you very kindly for the card of invitation to the meeting of the Alumni, and regret to say that I will not be able to be present myself. May success attend your efforts and add many to our lists, is the wish of yours, most respectfully,

JOHN V. HOFFMAN, 784 Madison Ave., Baltimore,
Class 1867.

Death of members since annual meeting:—

Charles S. Lee	Class 1870	April 1st, 1885
John George Seitz	" 1882	June 21st, 1885
George W. Eldridge	" 1863	June 25th, 1885

GRADUATING CLASS

Sixty-Fourth Session,

PHILADELPHIA COLLEGE OF PHARMACY,

1884-1885.

NAME.	PLACE.	SUBJECT OF THESIS.
Amsden, George Sidney	Manchester, Ia	*Materia Medica for Students.*
Anthes, Philip	Pittsburg, Pa	*Lard and Adulterations.*
Barker, James Henry	Plaquemine, La	*Fluid Extracts.*
Bartel, Max	Milwaukee, Wis	*Caryophyllus.*
Beckberger, Henry	Sandusky, O	*Our Own* vs. *Patent Preparations.*
Bichy, William	Buffalo, N. Y	*Stillingia.*
Bissell, Wayne Barker	Waterville, N. Y	*Hop Extracts.*
Bowers, Luther Pascal	Jefferson, Md	*Ether Aceticus.*
Bozenhard, Wm. Theodore	Dayton, O.	*Hypophosphorus Acid.*
Brandner, Henry, Jr	Atchison, Kas	*Assay of Cinchona.*
Brown, Albert Edward	Mobile, Ala	*Analysis of Sulphate of Morphia.*
Cadmus, Robert Clark	Philadelphia, Pa	*Liquor Ferri Chloridi.*
Cahoon, Edward Daily	Dover, Del	*Early Chemistry.*
Carnan, George Lewis	Mt. Laurel, N. J	*Concentrated Nitrous Ether.*
Champion, Carlton Cole	Philadelphia, Pa	*Future of Retail Pharmacists.*
Coltman, Thomas Clements	Jenkintown, Pa	*Fraxinus Americana.*
Cooley, James Sherman	Flemington, N. J	*Pharmacy Laws.*
Craythorn, Charles John	Beverly, N. J	*Alcohol.*
Crothers, Samuel Ross	Zion, Md	*Pharmacy.*
Davis, Fred. Horace	Camden, Del	*Ailanthus Glandulosus.*
Davison, Blythe James	Canton, Pa	*Mentha Piperita.*
Deakyne, Oscar Boone	Wilmington, Del	*Citric Acid.*
Deem, David Ferguson,	Union City, Ind	*Cod Liver Oil.*
DeLong, William Edward	Bangor, Pa	*Chemistry and Pharmacy.*
Dennisson, George Eicholtz	Downington, Pa	*Sanguinaria Canadensis.*
Dennison, Ulysses Grant	New Castle, Del	*Cod Liver Oil.*
Denniston, William Milliken	Hollidaysburg, Pa	*Arsenious Acid.*
Deuschle, William D	Chillicothe, O	*Elixirs,*
Dickeson, Morton Phelps	Media, Pa	*Emulsions.*
Diefenbeck, Henry	Allegheny City, Pa	*Hydrangia.*
Dielman, Lewis Henry	New Windsor, Md	*Erythroxylon.*
Dreiss, Hermann Edward Frederick	San Antonia, Tex	*Pepsin.*
Dunbar, Thomas, Jr	Philadelphia, Pa	*Liriodendron Tulipifera.*
Ebeling, George Henry	Wheeling, W. Va	*Hydrargyri Iodidum Viride.*
Eberly, Jacob Addison	Mechanicsburg, Pa	*Suppositories.*
Edmonds, George Washington	Philadelphia, Pa	*Pepsin and Peptones.*
Eldredge, Joseph Johnson	Cape May City, N. J	*Pills and Excipients.*
Ely, Samuel S	Philadelphia, Pa	*Crystallization.*
Engler, John George	Hartford, Conn	*Syrupus Pruni Virginianæ.*
Feairheller, Theodore	Philadelphia, Pa	*Emulsions.*
Fienhold, Edward Henry	Philadelphia, Pa	*The Pharmacist.*
Gable, Ralph Benton	Reading, Pa	*Old and New Pharmacopœia Formulas.*
Gebhard, Adolph Emil	Muskegon, Mich	*Mounting of Botanical Specimens.*
Gehris, Peter Spang	Reading, Pa	*Erythrina Piscidia.*
Green, Benjamin Wallace	Millington, Md	*Pharmaceutical Extracts.*
Haffa, George Adam	Philadelphia, Pa	*Green Iodide of Mercury.*
Hagenbuch, James Hervey	Mahanoy City, Pa	*Chocolate.*
Hall, Jesse Barclay	Norristown, Pa	*Medicinal Herbs of Montgomery Co.*
Hamilton, Wm. Swearingen	Fairmont, W. Va	*Gaultheria.*

NAME.	PLACE.	SUBJECT OF THESIS.
Hammond, Arthur Brown	Baltimore, Md	*Liquor Magnesii Citratis.*
Harrington, Silas Marion	Plano, Tex	*Estimation of Alkaloids in Ignatia.*
Harper, William Franklin	Madison, Ind	*Physostigma Venonosa.*
Harris, Clinton Kelty	Salem, N. J	*Simple Elixir.*
Harris, Norton O	Dover, Del	*Oleum Morhuæ.*
Hassler, Daniel Herr	Carlisle, Pa	*Lime Fruit Juice.*
Haynsworth, Julius Dargan	Darlington, S. C	*Oil of Turpentine and its Manufacture.*
Heider, Henry George	Fon du lac, Wis	*Syrupus Rhei.*
Heinitsh, Henry Ernest	Philadelphia, Pa	*Tinctura Avenæ Sativæ.*
Hess, Edwin Hutter	Harrisburg, Pa	*Dover's Solution.*
Howells, James Owen	Bridgeport, O	*Ohio Wines and Derivatives.*
Hunter, James, Jr	Philadelphia, Pa	*Carbo Animalis*
Hunter, James Stanton	Pittsburgh, Pa	*Pulvis Ipecacuanhæ et Upii.*
Hurd, George Edward	———, Wis	*Oleum Anthemidis Cotulæ.*
Jones, Harry Ellsworth	Mt. Holly, N. J	*Nitrate of Silver.*
Keller, Alexander George	Philadelphia, Pa	*Oleic Acid and Oleates.*
Ketcham, Stephen Rush	Philadelphia, Pa	*Emulsions.*
Kirk, Grant Elmer	Philadelphia, Pa	*Eriodictyon Californicum.*
Kuehnel, Gustav Frank	Milwaukee, Wis	*Rhododendron Maximum.*
Kunkel, William Evans	Harrisburgh, Pa	*Petroleum Ointments.*
Kyle, Elmer Bryan	York, Pa	*Menthol.*
Kyner, James Almer.	Orrstown, Pa	*Butter.*
Landis, Frank Theodore	Palmyra, Pa	*Japanese Menthol.*
Lautenbacher, Irvin Lincoln	Schuylkill Haven, Pa	*Milk and Derivatives.*
Laval, William John	Evansville, Ind	*Menthol.*
Lewis, William M	———, Pa	*Pills and their Excipients.*
Lewis, Llewellyn Hughes	Chester, Pa	*Erythroxylon Coca.*
Lichtenberger, Frederick Jacob	Freeport, Ill	*Thesis Writing.*
Lochman, Charles Napier	Bethlehem, Pa	*Collinsonia Canadensis.*
Maisch, Henry Charles Christian	Philadelphia, Pa	*Illicium Floridanum.*
Malatesta, Joseph Mark	Philadelphia, Pa	*Opium.*
Matter, Robert Borton	Lewistown, Pa	*Hydrargyrum cum Creta.*
Mauch, Charles Milton, Jr	Hellertown, Pa	*Compound Tincture of Cinchona.*
May, Rollin R	Wilmington, Del	*Amyl Nitrite.*
Mayer, Charles Eugene	Boyertown, Pa	*A Pharmacy*
Meissner, Paul Ernest	Milwaukee, Wis	*An Indispensable.*
Mitcheson, Robert Stockton Johnson.	Philadelphia, Pa	*Olea Volatilia.*
Morse, Frank	Hanover, Ind	*Advantages of Pharmaceutical Manufacturing.*
Moses, Matt. U. S. Grant	Trenton, N. J	*Formation of Honey.*
Mount, Elmer Marshall	Wilmington, Del	*Pepsin.*
Moyer, Edward Oliver	Catasauqua, Pa	*Oleates.*
Naudain, Edgar Harman	Wilmington, Del	*Pinckneya Pubens.*
Nebinger, Jacob Lewis	Philadelphia, Pa	*Some Officinal Syrups.*
Newton, John W	Gallipolis, O	*Coloring Matter of Hydrastus Canadensis.*
Odenwelder, Harry Louis	Easton, Pa	*Chloral Hydrate.*
Pancoast, George Widdifield	Moorestown, N. J	*Solubility of Quinine Pills.*
Patterson, Albert Raymond	Zanesville, O	*Pharmacy.*
Peters, Leopold	Fulton, Ill	*Vinum Ipecacuanhæ.*
Ramey, Charles Clifton	Norristown, Pa	*Gossypium Herbaceum.*
Reagan, Dennis	Easton, Pa	*Mentha Piperita.*
Rebner, Charles Morris	Atchison, Kas	*Scammony.*
Rebsamen, Charles Frederick	Leavenworth. Kas	*Practical Remarks.*
Reinnoldt, Henry Otto	Sheboygan, Wis	*Magnesii Sulphus.*
Reynolds, Walter	Philadelphia, Pa	*Oleum Gossipii Seminis.*
Rhoads, William Stevens	Houtzdale, Pa	*Oleum Menthæ Piperitæ.*
Riggs, Elias Ellsworth	Heightstown, N. J	*Emulsions.*
Roberts, Joseph Cuttell	Wilmington, Del	*Fraxinus Americana.*
Rosenzweig, Benjamin	Philadelphia, Pa	*Extr. Rhei. Fluidum.*
Rossler, George Frederick	Berlin, Germany	*Practical Hints.*
Santee, Andrew Curtin	Town Line, Pa	*Rubus.*
Saunders, Henry Scholey	London, Ont. Canada	*Cross Sections.*
Schaible, Emil	Lafayette, Ind	*Carbonate of Ammonia.*
Schiegel, Carl Edward	Davenport, Ia	*Illicium.*
Schofield, Allen Curtis	Piqua, O	*Hamamelis.*
Schuchard, Herman Julius	San Antonio, Tex	*Gum Mezquite.*
Schwartz, Frederick	Philadelphia, Pa	*Grains of Paradise.*
Sailer, Wm. Frederick	Philadelphia, Pa	*Ammonia.*
Serfass, Abraham Lincoln	Easton, Pa	*Pills and Excipients.*
Shaw, Henry Clay	Piedmont, W. Va	*Orange Trees.*
Sher, Frederick Paul	Philadelphia, Pa	*Simaruba.*
Sinne, Hans Heinrich	Prussia, Germany	*Salicylic Acid.*
Smith, Christopher Columbus	Philadelphia, Pa	*Bismuth and Preparations.*
Smith, George Mark	Annville, Pa	*Assay of Opium.*
Snavels, Harry Barr	Lancaster, Pa	*Thymus Vulgaris.*
Swann, Samuel Davis	Fernandina, Fla	*Erythroxylon Coca.*

NAME.	PLACE.	SUBJECT OF THESIS.
Swain, Harry	Georgetown, Del	*Pulverization of Drugs.*
Stienicken, George Augustus	Wilmington, Del	*Petroleum.*
Stermer, John Henry	York, Pa	*Hydrocyanic Acid.*
Stichter, Henry Deischler	East Greenvile, Pa	*Opiates.*
Stiles, Henry Lippincott	Moorestown, N. J	*Abstracta.*
Stoll, Samuel Franklin	Buckyrus, O	*Excipient for Pills.*
Thiebaud, Hugh McCallum	Mevay, Ind	*Erigeron.*
Thompson, William Cochran	Coatesville, Pa	*Ustilago.*
Tifft, Frederick Allen	Camden, N. J	*Cellulose.*
Trefry, Thomas Crowell	Yarmouth, N. S	*Oils of Rose and Wintergreen.*
VanBuskirk, Samuel Levick	Bethlehem, Pa	*Maydis Stigmata.*
Vannort, William Augustus	Hainsville, Md	*Acid Hydrocyanic Dilute.*
VonAchen, Frank Hermann	Peoria, Ill	*Assay of Quinine Pills.*
Webster, Samuel C	Philadelphia, Pa	*Gossypium.*
Wegener, Henry, Jr	Oshkosh, Wis	*Aspidosperma Quebracho.*
Weisel Benjamin Franklin	Elizabeth City, N. C	*Nitrate of Silver.*
Williams, Neri Barndt	Easton, Pa	*Natalus Albus.*
Whilden, Charles Bennett	Charleston, S. C	*Iodoform.*
Windolph, J. Frederick	Dover, Del	*Syrups by Cold Percolation.*
Woodill, Robert Wellesley	Halifax, N. S	*Alcohol.*
Wood, Alfred Conard	Hatboro, Pa	*Chloride of Gold and Sodium.*
Wright, James Edward	Philadelphia, Pa	*Cane Sugar.*
Yost, William Oscar	Norristown, Pa	*Verbascum Thapsus.*

Alabama	1
Canada	1
Connecticut	1
Delaware	12
Florida	1
Germany	2
Illinois	3
Indiana	6
Iowa	2
Kansas	3
Louisiana	1
Maryland	6
Michigan	1
New Jersey	11
New York	2
North Carolina	1
Nova Scotia	2
Ohio	8
Pennsylvania	68
South Carolina	2
Texas	3
West Virginia	3
Wisconsin	7
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The Secretary desires the address of the following members :—

John W. Boyd,	Class	1860
Jacob Senneff,	“	1862
Henry B. Morris,	“	1864
J. F. Hillery,	“	1865
John B. Lindsay,	“	1865
Wilson B. Smith,	“	1865
Geo. M. Swain,	“	1867
Howard England,	“	1868
Homer A. Smith,	“	1868
Wm. Rush Ehler,	Class	1870
Horatio N. Frasser,	“	1872
Monroe Bond, M. D.,	“	1873
James Armstrong Allen,	“	1874
Fred'k Wm. Latz,	“	1874
Geo. C. Lescher,	“	1874
Thos. D. Terrell,	“	1874
Chas. W. Mengle,	“	1881
Cyrus Maxwell Boger, Jr.,	“	1882

N. B.—The members will please scrutinize the list of names of members *carefully*, and if any errors are noticed, or if any are known to be deceased and not marked as such, please notify the Secretary, so that a complete and correct record may be kept of the membership.

Also, if your address is not correctly given, or if any member knows the address of those marked unknown, please notify the Secretary, Wm. E. Krewson, No. 145 N. Tenth St., Philadelphia.

ACTIVE MEMBERS BY RESOLUTION.

The following resolution appeared in the minutes of the First Annual Meeting of the Alumni Association :—

"*Resolved*, That all graduates of the Philadelphia College of Pharmacy, previous to 1850, be admitted as members of the Association, and that they be entitled to all the rights and privileges of members."

The following list of names comprises those who were made active members of the Association by the above resolution :

DECEASED MEMBERS IN ITALICS.

1826.

Chas. H. Dingee.
William Sharp.
Chas. McCormick, address unknown.

1827.

Alexander Dawson, address unknown.

1828.

Geo. D. Coggeshall, address unknown.
John H. Dingee.
Chas. Hathwell.

1829.

John C. Allen, 335 S. 5th St., Phila., Pa.
Jos. H. Brooks.
Robeson Moore.
Chas. E. Pleasants.
Franklin R. Smith, M. D., St. Paul, Minn.
Joseph Scattergood.
Wm. R. Fisher.

1830.

Edward Brooks, address unknown.
Chas. D. Hendry.
Dillwyn Parrish, 1017 Cherry St., Phila., Pa.
Isaac Jones Smith.

1832.

Richard M. Reeve.
John Bringhurst.

1833.

Samuel W. Brown, address unknown.
Wm. P. Hansford, "
Edward Hopper, 323 Walnut St.; Phila., Pa.
Thos. J. Husband, N. W. cor. Third and Spruce Sts., Phila., Pa.
Thos. H. Powers.
Samuel Simes.
Jos. C. Turnpenny, 813 Spruce St., Phila., Pa.
Watson J. Welding.

1834.

Wm. B. Chapman.
Aug. J. H. Duhamel.
Wm. Ellis.
Alfred Guillou.
Stephen Procter.
Ambrose Smith.
Samuel Thompson.
John H. Tilghman, address unknown.
David B. Trimble, M. D., Starke, Bradford Co., Fla.
Joseph Trimble.

1835.

James Cockburn, Jr., address unknown.
Jonathan Evans, Jr.
James Hopkins, 2018 Spruce St., Phila., Pa.
Wm. R. Kitchen.
Clement J. Lee, Newport, Cumberland Co., N. J.
Isaac J. Martin, "
A. J. Olmstead, "
Richard Price, Box 79, Moorestown, N. J.
Charles Shreve.

1836.

Henry C. Blair.
John W. Simes, Jr., S. E. cor. 22d and Market Sts., Phila., Pa.
Jos. M. Turner.

1837.

John Goodyear.
Wm. L. Hasbrook, address unknown.
Benj. F. Hœckley, 462 N. 4th St., Phila., Pa.
Thos. R. F. Mitchell, address unknown.
Gustavus Ober, "
Wm. Procter, Jr. (Professor.)
James Levis Elliot, M.D., 1719 Pine St., Phila., Pa.
Robert J. Kennedy, address unknown.

1838.

Henry Brooks, address unknown,
Thos. W. Harris, "
Wm. E. Knight, S. E. cor. 10th and Locust Sts., Phila., Pa.
Claudius B. Linn, 13 S. Front St., Phila., Pa.
Robert B. Potts.

1838.

Richard Rushton.
Dickinson A. Woodruff.
Henry W. Worthington.
Chas. W. Simons, address unknown.

1839.

Thos. Haines, address unknown.
Thomas C. Hopkins.
Walter Shinn.

1840.

Wm. H. Corie, address unknown.
John W. Douglas, Chambersburg, Pa.
Albert S. Letchworth, 534 N. 4th St., Phila., Pa.
Benj. I. Ritter.

1841.

J. Crawford Dawes, 36th St. and Gray's Ferry Road, Phila., Pa.
Caleb H. Needles.

1842.

Peter Babb, address unknown.
Wm. G. Baker, Lancaster, Pa.
Wm. J. Carter.
Adolph P. Grotjan.
Edward Parrish (Professor).
Wm. J. Jenks, 461 Marshall St., Phila., Pa.
Wm. H. Schively, 121 Harvey St., Germantown, Pa.
Laurence Turnbull, M. D., 1502 Walnut St., Phila., Pa.
Samuel Wetherell, address unknown.

1843.

Caverly Boyer, address unknown.
Edward Donnelly, address unknown.
Daniel S. Jones, N. W. cor. 12th and Spruce Sts., Phila., Pa.
Joshua S. Jones, address unknown.
Andrew McKim, address unknown.

1844.

Robt. C. Brodie, S. W. cor. 20th and Callowhill Sts., Phila., Pa.
Robt. Coulton Davis, S. E. cor. 16th and Vine Sts., Phila., Pa.
Thos. Estlack, 1826 Market St., Phila., Pa.
Thos. S. Wiegand, 145 N. Tenth St., Phila., Pa.
Jacob L. Smith, 1034 Green St., or 17th and Fitzwater Sts., Phila., Pa.
Alfred B. Taylor, 31 S. 11th St., Phila., Pa.
Geo. H. Mitchell, address unknown.
Wm. St. Clair Nichols, address unknown.
Silas H. Wentz.

1845.

Thos. Leidy, address unknown.
Joseph A. McMakin.
Wm. N. Needles, Walnut Lane, cor. Green St., Germantown, Pa.
Wm. B. Webb, S. W. cor. 10th and Spring Garden Sts., Phila., Pa.
Caleb R. Keeney, N. W. cor. 16th and Arch Sts., Phila., Pa.

1846.

Jacob L. Baker, address unknown.
John Dickson.
Robt. England, S. W. cor. 10th and Catharine Sts., Phila., Pa.
Hiram C. Lee, address unknown.
Geo. W. Patrick, M. D.
Robt. M. Patterson.
Thos. J. Scott, care B. F. Bruce, Lexington Ky.
Benjamin R. Smith, 4717 Germantown Ave., Phila., Pa.
Chas. F. Stoever, address unknown.
Peter T. Wright.
John A. Whartenby.

1847.

Chas. Bullock, 528 Arch St., Phila., Pa.
James H. Crew, address unknown.
Evan T. Ellis, 145 S. Front St., Phila., Pa.
T. Curtis C. Hughes.
Samuel Lenher.
John R. Lewis, address unknown.
G. Graves Louden, "
Chas. S. Rush, "
Alfred K. Scholl.
Alfred Lafayette Taylor.
N. Spencer Thomas, Elmira, N. Y.

1848.

John R. Andrews, address unknown.
Samuel M. Bines, 114 S. 4th St., Phila., Pa.
Chas. M. Cornell, address unknown.
Franklin C. Hill, Princeton College, Princeton, N. J.
James Laws, Jr., M. D., 1936 Spruce St., Phila., Pa.
Chas. A. Santos, Norfolk, Va.
John A. Springer, address unknown.
Edmund Pollitt, 330 Chestnut St., Camden, N. J.
Geo. T. Wiggan, address unknown.
Chas. M. Wilkins, Philadelphia, Pa.

1849.

Chas. H. Bache.
Samuel L. Costill, address unknown.
Chas. Hartzell, "
Samuel Hastings, "
Wm. W. D. Livermore.
T. Morris Perot, 1810 Pine St., Phila., Pa.
Isaac W. Stokes, Medford, N. J
Avery Tobey, address unknown.
Edmund A. Crenshaw, 528 Arch St., Phila., Pa.
Oscar Steel, address unknown.

Total, 146.

LIST OF ACTIVE MEMBERS

OF THE

ALUMNI ASSOCIATION

OF THE

Philadelphia College of Pharmacy.

1830.

Parrish, Dillwyn, 1017 Cherry St., Phila., Pa.

1842.

Jenks, Wm, J., 160 N. Third St., Phila., Pa.

1844.

Brodie, Rob't C., S. W. cor. Twentieth and Callowhill Sts., Phila., Pa.
Davis, Robert Coulton, S. W. cor. Sixteenth and Vine Sts., Phila., Pa.
Wiegand, Thos. S., No. 4 S. 38th St., West Phila., Pa.

1845.

Keeney, Caleb R., N. W. cor. Sixteenth and Arch Sts., Philadelphia, Pa.

1849.

Crenshaw, Edmund A., 528 Arch St., Phila., Pa.

1850.

Bunting, Samuel S., N. E. cor. Tenth and Spruce Sts., Phila., Pa.

1853.

Gutekunst, Fred'k, 712 Arch St., Phila., Pa.
Sheaff, John F., 114 S. Fourth St., Phila., Pa.

1854.

Bower, Henry, cor. Gray's Ferry Road and Twenty-ninth St., Phila., Pa.
Lemberger, Jos. L., Lebanon, Pa.
Miller, William J., 224 N. Third St., Phila., Pa.
Shinn, Jas. T., S. W. Cor. Broad and Spruce Sts., Phila., Pa.

1855.

Armstrong, Jas. A., M. D., Camden, N. J.
Bakes, Wm. C., Ocean Grove, N. J.
Bancroft, Jos. W., care Loyd Hoppen, 1316 Vine St., Phila., Pa.
Bannvart, Chas. J., Treasury Department, Washington, D. C.
Griffith, J. Clarkson, 134 Stanton Ave., Chicago, Ill.
Lawall, Edmond, Allentown, Pa.
Rittenhouse, Henry N., 214–220 N. Twenty-second St., Phila., Pa.
Robbins, Alonzo, S. E. cor. Eleventh and Vine Sts., Phila., Pa.

1856.

Evans, Wm., Jr., 252 S. Front St., Phila., Pa.
Warner, Wm. R., 1228 Market St., Phila., Pa.

1857.

Blinkhorn, George, S. E. cor. Tenth and Chestnut Sts., Phila., Pa.
Campbell, Samuel, 1412 Walnut St., Phila., Pa.
Hancock, Chas. W., 3425 Spring Garden St., Phila., Pa.
Hughes, C. Collin, S. W. cor. Eighth and Race Sts., Phila., Pa.
Mercein, James R., 41 Montgomery ave., Jersey City, N. J.
Massenburg, T. L., Macon, Georgia.

1858.

Fox, Peter P., N. E. cor. Twenty-third and Spruce Sts., Phila., Pa.

1859.

Coombe, Thomas R., Delanco, N. J.
Dodson, Chas. G., N. E. cor. Fifth and Chestnut Sts., Phila., Pa.
Eberle, Chas. L., cor. Mill and Main Sts., Germantown, Pa.
Geyer, Henry F., No. 222 Strand St., Galveston, Texas.
Jefferson, Chas. L., Zoological Garden, Thirty-fifth and Girard Ave., Phila., Pa.
Richards, Geo. K., care of Stallman & Fulton, No. 53 Cedar St., New York City.

1860.

Bolton, Joseph P., Germantown, Pa.
Boyd, John W., address unknown.
Franklin, Thomas H., N. E. cor. Twenty-fifth and Jefferson Sts., Phila., Pa.
Gegan, J. J., 812 S. Second St., or cor. 6th and Bainbridge Sts., Phila., Pa.
Newman, Geo. A., 380 Myrtle St., Brooklyn, N. Y.
Parrish, Wm. G., M. D., 477 Hudson St., New York City.
Vogelbach, Herman A., Melrose, Alachua Co., Florida.

1861.

Abernethy, J. Maxwell, 188 Newark Ave., Jersey City, N. J.
Brown, Frederick, Jr., N. E. cor. Fifth and Chestnut Sts., Phila., Pa.

1861.

*Githens, Wm. H. H., M. D., 2033 Spruce St., Phila., Pa.
Heydenreich, Emil, 169 Atlantic Ave., Brooklyn, N. Y.
Stoever, J. Melancthon, M. D., Chester, Pa.

1862.

Brown, Albert P., Camden, N. J.
Blithe, Henry, 3212 Market St., Phila., Pa.
Chipman, Edward D., Main St., opp. Court House, Goshen, Ind.
Diehl, C. Louis, (Prof.,) cor. Third and Broadway, Louisville, Ky.
Dobbins, Edward T., 1808 S. Rittenhouse Square, Phila., Pa.
Jacobs, Henry H., 622 Race St., Phila., Pa.
Miller, Adolph W., M. D., N. W. cor. Third and Callowhill Sts., Phila., Pa.
Naulty, Wm. H., 69 Duane St., N. Y.
Peck, Henry T., M. D., Coulter House, Germantown, Pa.
Senneff, Jacob, address unknown.
Shoemaker, Richard M., N E. cor. Fourth and Race Sts., Phila., Pa.
Smedley, Bennett L., S. E. cor. Twenty-first and Vine Sts., Phila., Pa.
Witmer, David L., cor. Fifth and Germantown Ave., Phila., Pa.

1863.

†Eldridge, Geo. W., S. W. cor. Seventh and Thompson Sts., Phila., Pa.
Fox, Daniel S., 323 Franklin St., Reading, Pa.
Hambright, Geo. M., Lancaster, Pa.
Kirkbride, Joseph C., St. Louis, Mo.
McIntyre, Wm., 2229 Frankford Ave., Phila., Pa.
Mellor, Alfred, 214–220 N. 22d St., Phila., Pa.
Murray, Talbot C., 296 Delaware Ave., Washington, D. C.
Ruan, James, 618 Emlin St., Phila., Pa.
Tomlinson, Edwin, M. D., Gloucester City, N. J.
Tilge, F. A., 25 N. Sixth St., Phila., Pa.

1864.

Buehler, Ed. H., Room 6, Portland Block, Chicago, Ill.
Croft, Henry C., Park Ave. and Madison St., Baltimore, Md.
Ebert, Albert E. (Prof.), 186 West Madison St., Cor. Halsted St., Chicago, Ill.
Jeannot, G. E., Louisville, Ky.
Jones, Edward C., S. E. cor. Fifteenth and Market Sts., Phila., Pa.
McCollin, S. Mason, M. D., 1128 Arch St., Phila., Pa.
Moore, Joseph E., 154 Newark Ave , Jersey City, N. J.
Morris, Henry B., address unknown.
Newton, Alfred W., 2530 N. Sixth Street, Philadelphia, Pa.
Simes, J. Henry C., M. D., 2033 Chestnut St., Philadelphia, Pa.

1865.

Blair, Andrew, S. W. cor. Eighth and Walnut Sts., Phila., Pa.
Blomer, Aug. P., M. D., N. W. cor. Moyamensing Ave. and Dickinson St., Philadelphia, Pa.
Ditman, Andrew J., 10 Astor House, N. Y.
Gross, Geo. A., 119 Market St., Harrisburg, Pa.

1865.

Heller, Marx M., 24 Orange St., Cleveland, O.
Hillery, J. F., address unknown.
Huber, Milton, Williamsport, Pa.
Kennedy, Chas. W., 447 Maria St., Phila., Pa.
Lindsay, John B., address unknown.
McElroy, Jas. B., Twenty-fourth and Alabama Ave., San Francisco, Cal.
Milner, Jas. P., M. D., N. E. cor. Sixth and Lombard Sts., Phila., Pa.
Moser, Americus H., Allentown, Pa.
Orth, Fred'k C., Holmesburg, Phila., Pa.
Preston, David, S. W. cor. Ninth and Lombard Sts., Phila., Pa.
Ranck, J. W., M. D., 3922 Germantown Ave., Phila., Pa.
Rinker, Wm. H., S. W. cor. Mervine and Norris Sts., Phila., Pa.
Smith, Wilson B., address unknown.
Vogelbach, Edmond, S. W. cor. Frankford Ave. and York St., Phila., Pa.
Walker, John T., M. D., N. W. cor. Second and Columbia Ave., Phila., Pa.
Wendel, H. Edward, S. E. Cor. Third and George Sts., Phila., Pa.
White, James T., cor. Fortieth and Locust Sts., Phila., Pa.

1866.

Allen, Wm. E., 2237 Mascher St., Phila., Pa.
Blair, Henry C., S. W. cor. Eighth and Walnut Sts., Phila., Pa.
Braddock, Isaac A., Haddonfield, N. J.
Campbell, Hugh, Osceola Mills, Pa.
Kneeshaw, Wm. W., Wissahickon, Phila., Pa.
Laird, Wm. R., 250 Washington St., Jersey City, N. J.
Lippincott, Robt. C., 224 S. Third St., Phila.
McPike, Wm. C., Atchison, Kansas.
Miliac, John A., N. W. Cor. 24th and Master Sts., Phila., Pa.
Newbold, Thos. M., S. E. cor. Forty-first and Chestnut Sts., Phila., Pa.
Newton, John S., M. D., 4106 Hutton St., West Phila., Pa.
Painter, Emlin, New York City.
Remington, Jos P. (Prof.), N. E. cor. Thirteenth and Walnut Sts., Phila , Pa.
Riley, Chas. W., 1115 Race St., Phila. Pa.
Ross, Hugh H., N. W. cor. Thirteenth and Brown Sts., Phila., Pa.
Sayre, Lucius E., S. W. cor. Eighteenth and Market Sts., Phila., Pa.
Shoemaker, Allan, N. E. cor. Fourth and Race Sts., Phila., Pa.
Shoemaker, Jr., Benjamin, 1926 N. Seventeenth St., Phila., Pa.
Simson, Wm. H., Halifax, N. S. (care Brown Bro. & Co.).
Souder, Jos. A., No. 4514 Germantown Ave., Phila., Pa.
Strehl, Louis, 426 State St., Chicago, Ill.
Walker, Thos. A , S. E. cor. Fifteenth and Market Sts., Phila., Pa.

1867.

Allaire, Chas. B., 108 Main St., Peoria, Ill.
Bartram, Ernest, 1513 Vine St., Phila., Pa.
Blum, Thomas J., Twenty-first and Fitzwater sts., Phila., Pa.
Borhek, Jr., J. T., Bethlehem, Pa.
Boring, Edwin M., N. E. cor. Tenth St. and Fairmount Ave., Phila., Pa.
Brown, Sam'l A., M. D., 28 and 30 Fulton St., New York City.

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*Resigned. †Deceased June 25, 1885.

1867.

Brown, Thos. J., 233 S. Ninth St., Phila., Pa.
Buckman, Jas., S. E. cor. Eighth and Green Sts., Phila., Pa.,
Carberry, P. J. L., Girard House, Phila., Pa.
Erwin Bertine S., Bethlehem, Pa.
Haig, Chas. R., N. W. cor. Nineteenth and Master Sts., Phila., Pa.
Harner, Jas. M., S. Fourth St., cor. Fifth St., Brooklyn, N. Y.
Himmelwright, F. E., M. D., 2002 N. Eighth St., Phila., Pa.
Hoffman, John V., 748 Madison Ave., Baltimore, Md.
Jones, Edward B., Mt. Holly, N. J.
Kurtz, Augustus M., San Francisco, Cal.
Little, Arthur H., 1831 Filbert St., Phila., Pa.
Moore, Chas. C., 1801 N. Broad St.
Roche, Wm. F., S. E. cor. Fifteenth and South Sts., Phila., Pa.
Shivers, Jr., Chas., N. E. cor. Seventh and Spruce Sts., Phila., Pa.
Simes, Samuel, S. E. cor. Twenty-second and Market Sts., Phila., Pa.
Swaim, Geo. M., address unknown.
Vandegrift, Isaac P., 166 S. Fourth St., cor. Fifth Ave., Brooklyn, N. Y.
Webb, Sam'l W., 1706 Sydenham St., Phila., Pa.
Weichselbaum, J., M. D., Chatham Square, Savannah, Ga.
Weidemann, Charles A., M. D., S. E. cor. Twenty-second and Green Sts., Phila., Pa.
Wike, Albert D., Marietta, Pa.

1868.

Beck, J. W., Lancaster, Ohio.
Boyd, Abraham, Tabor Block, Denver, Col., per Wiswall, agt. Life Ins. Co.
Bradley, Thos. F., 622 S. 18th St., Phila., Pa.
Bronson, Eugene C., address unknown.
Clark, A. B., Jr., 9 Main St., Galesburg, Ill.
Day, Robert L., Sommerville, N. J.
Dilks, S. Levin, N. E. cor. Sixth and Pine Sts., Phila., Pa.
Elliott, Frederick G., 141–43 N. Fourth St., Phila., Pa.
England, Howard, address unknown.
Estlack, Horace W., 1233 S. Seventeenth St., Phila., Pa.
Farr, Wm. L., Oxford, Ohio.
Foulke, James, M. D., 250 Washington St., Jersey City, N. J.
Fronheiser, Jas. J., Johnstown, Pa.
Harrop, Joseph, Leavenworth, Kansas.
Hecker, Jacob K., 1414 N. Second St., Phila., Pa.
Jordan, Henry A., Bridgeton, N. J.
Klump, Chas. C., Allentown, Pa.
Karch, Joseph, Ninth and Cumberland Sts., Lebanon, Pa.
Kay, Samuel D., 224 Monticello St.; or, J. C. C. Hospital, Jersey City, N. J.
Lillard, Benjamin, No. 72 William St., New York City.
McInall, Jr., Edward, Wilmington, Del.
Mathews, Chas. C., Shippensburg, Pa.
Marshall, Robert T., 1215 Market St., Phila., Pa.
Parrish, Clemmons, 72 Henry St., Brooklyn, N. Y.
Raser, Wm. H., care Stillman & Fulton, 53 Cedar St., N. Y.
Rice, Wm. C., Jr., 702 N. Second St., Phila., Pa.
Seybert, Robert S., Hillsboro', Ohio.
Shoffner, John N., Butte, Montana.
Shaw, Jos. B., M. D., Del. Water Gap, Monroe Co., Pa.
Simon, Matthias, La Crosse, Wis.
Shryock, Allen, 1213 Green St., Phila., Pa.
Smith, Homer A., address unknown.
Stackhouse, George P., 2324 Christian St., Phila., Pa.
Steifel, Louis, 346 Dillwyn St., Phila. Pa.
Thomas, Frank W., Dayton, Ohio.
Wilson, Wm., 106 Broadway (or Pine St.), N. Y.

1869.

Bates, Louis A., 739 Sixth Ave., N. Y. City.
Bell, Jas. S., Memphis, Tenn.
Davis, Harry H., N. E. cor. Third and Kaighn's Point Ave., Camden, N. J.
Fruh, Carl D. S., M. D., 2321 Ridge Ave., Phila., Pa.
Husband, Thos., J., Jr., N. W. cor. Third and Spruce Sts., Phila., Pa.
Jones, D. Augustus, 622 S. Ninth St., Phila.
Kelty, Clement, Salem, N. J.
Kennedy, Geo. W., 103 N. Centre St., Pottsville, Pa.
Krewson, Wm. E., 1829 N. Eighth St. Phila.
Lamparter, Eugene, M. D., S. E. cor. Seventeenth and Reed Sts., Phila., Pa.
Merklein, Chas. H., M. D., No. 245 S. Eighth Street, Phila., Pa.
Moorhead, Wm. W., M. D., S. W. cor. Broad and South Sts., Phila., Pa.
Penrose, Stephen F., cor. Main and Broad St., Quakertown, Pa.
Pfromm, Adam, 233 N. Second St., Phila., Pa.
Phelps, Fred'k H., Jackson, Cal.
Reynolds, John J., Flemingsburg, Ky.
Robertson, Henry H., N. E. cor. Fifth and Chestnut Sts., Phila., Pa.
Sharp, Robt. P., M. D., Atglen, Chester Co., Pa.
Stein, Jacob H., 803 Penn St., Reading, Pa.
Taylor, Harry B., 1306 Girard Ave., Phila., Pa.
Treichler, L. Alpinus, cor. Main and Penn Sts., Germantown, Pa.
Unsicker, Charles B., Cincinnati, Ohio.
Ware, Samuel F., M. D., Cape May, N. J., or Wilmington, Del.

1870.

Chiles, Edward, Denver, Col.
Clark, Silas B., Townsend, Vt.
Connally, W. C., Atlanta, Ga.
Ehler, Wm. Rush, address unknown.
Hunter, Thos., M. D., S. W. cor. Fifteenth and Wharton Sts., Phila., Pa.
Hall, Jos. J., 41 Cedar St., Marshall, Tenn.
Hassenger, S. E. R., N. E. cor. Twenty-third and Fairmount Ave., Phila., Pa.
Herbert, Eugene, N. W. cor. Twelfth and Spruce Sts., Phila., Pa.
Kirkbride, Jos. J., M. D., 35 S. Nineteenth St., Phila., Pa
*Lee. Chas. S., 2127 Berks St., Phila., Pa.
McLaughlin, John T., Peoria, Ill.
Newbold, Henry A., S. E. cor. Forty-first and Chestnut Sts., W. Phila., Pa.
Rau, Eugene A., Bethlehem, Pa.
Schell, Harry D., 654 N. Fifteenth St., Phila.
Segrest, Lewis F., N. W. cor. Cedar and Cumberland Sts., Phila., Pa.
Supplee, Jesse L., N. E. cor. Thirteenth and Green sts., Phila., Pa.

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* Deceased April 1st, 1885.

1870.

Tomassevick, Leopold, St. Jago, Cuba.
Williamson, J. L., Meadville, Pa.
Wilhelm, J. Alexander, York, Pa.
Wenrich, Alfred B., 16 N. Thirteenth St., Phila., Pa.

1871.

Anthony, Joseph, 529 Broad St., Richmond, Va.
Camm, Henry V., 81 Commerce St., Bridgeton, N. J.
Conard, T. Elwood, M. D., S.W. cor. 7th and Brown Sts., Phila., Pa.
Ewing, Wm. G., 38 Union St., Nashville, Tenn.
French, Howard B., 410 Callowhill St., Phila.
Gramm, Edgar C., 4439 Frankford Ave., Frankford, Phila., Pa.
Hoskinson, J. Thos., Jr., N. W. cor. Front and Norris Sts., Phila., Pa.
Huneker, John F., 33 N.Twelfth St.,Phila. Pa.
Ink, Parker P., Washington, Iowa.
Jungman, Julius, 62d Street and Third Ave., New York City, N. Y.
Kadish, Chas. J., Chicago, Ill.
Kannal, Emmet, Kansselaer, Ind.
Lee, Emmor H., Columbia, S. C.
Lehman, J. Ehrman, Camden, N J.
McKelway, Geo. I., 1410 Chestnut St., Phila.
Odenwelder, A. J., Easton, Pa.
Paxson, Elliot D., care Caswell, Hazzard & Co , New York City.
Potts, Thos. H., S. E. cor. Broad and Parrish Sts., Phila., Pa.
Raser, John B., 154 N. Sixth St., Reading, Pa.
Shaw, Louis, D. D. S., No. 80 Ruado Ouvidor, Rio do Janeirs, Brazil.
Sniteman, Chas. C., Neillsville, Wis.
Snyder, E. D., Toledo, Ohio.
Vernon, Geo. R., M. D., Clifton Heights, Delaware Co., Pa.
Weaver, John A., 210 Madison Ave., Easton, Pa.
Weber, Fred'k C., M. D., Silver Cliff, Col.
Weber, William, S. E. cor. Fifteenth and Thompson Sts., Phila., Pa.
Worthington, J. W., N. W. cor. Eleventh and Arch Sts., Phila., Pa.

1872.

Addington, Wm. B., 700 Olive St., St. Louis, Mo.
Bille, George, S. E. cor. Second and Thompson Sts., Phila., Pa.
Bolton, Alfred H., 742 Christian St.,Phila.,Pa.
Cave, Joseph, N. W. cor. Tenth and Market Sts., Phila., Pa.
Dawson, John H., N. W. cor. Twenty-third and Valencia Sts., San Francisco, Cal.
Evans, Chas. B., Augusta, Ga. (care Sholes & Co.)
Fraser, Horatio N., address unknown.
Matos, Louis A., 3935 Aspen St., West Phila.
McElhenie, Thos. D., 259 Ryerson St., Brooklyn, N. Y.
Mitchell, Chas. L., M. D. (Prof.), N. E. cor. Ninth and Race Sts., Phila., Pa.
Mutchler, Henry M., Junction, N. J.
Procter, Wallace, S. W. cor. Ninth and Lombard Sts., Phila., Pa.
Schiedt, Jacob A , cor. Johnson and Green Sts., Germantown.
Shrum, John H., Lancaster, Pa.
Thiebaud, Chas. O., Vevay, Ind.
Wiley, Joseph, 123 N. Seventh St., Phila., Pa.

1873.

Addis, S. D., M. D., Penna. Steamship Company.
Antill, Jos. V., N.W. cor. Fifth and Dauphin Sts., Phila., Pa.
Apple, Ammon A., N. E. cor. Second and Dauphin Sts., Phila., Pa.
Beck, J. Howard, M. D., Ocean Grove, N. J., (P. O. box 66).
Bond, Monroe, M. D., address unknown.
Brakeley, Philip F., Philipsburg, N. J.
Bridger, Paul, 745 Spring Garden St.,Phila.,Pa.
Chiles, Richard T., Frankford, Ky.
Conlyn, Thos. A., Park Ave. and Madison St., Baltimore, Md.
Conrath, Adam, 630 Chestnut St., Milwaukee, Wis.
Cook, John E., 1840 Bucknell St., Phila., Pa.
Delker, William, N. E. cor. Seventh and Arch Sts., Phila., Pa.
Dubois, L. Stanley, P. O. box 101, Paducah, Ky.
Eberle, Herman T., care G. E. Eberle & Son, Watertown, Wis.
Flint, John Henry, Marysville, Yuba Co., Cal.
French, Arthur S., East Hampton, L. I., N.Y.
Gill, Wm. C., N. W. cor. Eleventh and Sommerville Sts., Phila., Pa.
Griggs, Allan G., Ottowa, Ill.
Gross, Edward Z., 119 Market St., Harrisburg, Pa.
Guth, Morris G., M. D., MountPleasant, Ia.
Harper, Frank M., 45 E. Main St., Madison, Ind.
Hohl, August, N. E. cor. Fourth and Girard Ave., Phila., Pa.
Hurt, James F., Broadway, Columbia, Mo.
Jones, J. Morris, Bethlehem, Pa.
Keasbey, Henry G., 328–34 N. Front St., Phila., Pa.
Kielhorn, Henry, cor. Ash St. and Christian Ave., Indianapolis, Ind.
Kille, Geo. Henry, N. W. cor. Tenth and Montgomery Ave., Phila., Pa.
Lange, Chas. R., address unknown.
Lerch, Wm. I., No. 910 N. 17th St., Phila., Pa.
Magill, B. Morris, N. W. cor. Seventeenth and Columbia Ave., Phila., Pa.
Martin, Samuel W., Lewistown, Pa.
Martindale, Wm. N., 1504 Vine St., Phila., Pa.
Mattison, Richard V., M. D., 328–34 N. Front St., Phila., Pa.
McCrea, J. Howard, Norristown, Pa.
Meyer, C. Carroll, 1802 Callowhill St., Phila., Pa.
Potts, David G., N. W. cor. Eighteenth and Master Sts., Phila., Pa.
Radefeld, Frederick, 500 Lombard St., Phila., Pa.
Schmidt, Henry, Newark, N. J.
Smith, A. E., Williamsburg, Va.
Stifel, Albert F., M. D., Twelfth St., Wheeling, W. Va.
Stewart, A. B., Duncannon, Pa.
Stem, Wm. N., S. W. cor. Twentieth and Callowhill Sts., Phila., Pa.
Truckenmiller, Geo. L., box 187, Petersburg, Ill.
Wood, James P., 3d and Pine Sts., Camden, N. J.
Willard, Jr., Roland, Haddonfield, N. J.
Zimmerman, Gustavus A., Johnstown, Pa.

1874.

Acker, Louis K., Franklin, Pa.
Allen, James Armstrong, address unknown.

1874.

Bakhaus, Edmund, S. W. cor. Freeman and Clark Sts., Cincinnati, O.
Banks, Wm. Baker, S. E. cor. Nineteenth and Shirley Sts., Phila., Pa.
Bantley, Bartholomew, Sixth and Spring Sts., Milwaukee, Wis.
Biddle, Chas. J., 3348 Market St., W. Phila.
Bryan, Harry N., M. D., 901 S. 4th St., Phila.
Buckman, Thos. L., Main St., Chestnut Hill, Phila., Pa.
Dawson, Jr., Edward S., 13 S. Salina St., Syracuse, N. Y.
Gleim, Francis H. E., Lebanon, Pa.
Hazlett, Edward E., M. D., Abilene, Dickinson Co., Kansas.
Hilton, Thos. C., Lock Haven, Pa.
Henry, Geo. S., Duncannon, Perry Co., Pa.
Hunter, David, M. D., Atlantic City, N. J.
Jacoby, Aaron P., care C. Jacoby, South Bethlehem, Pa.
Johnson, Geo. H., 2202 Ridge Ave., Phila.,Pa.
Jummel, Frank R., 627 S. Warren St., Trenton, N. J.
Keenan, Augustus H., 214 S. Main St.,Wilkesbarre, Pa.
Kingsbury, Howard, 1119 Walnut St., Phila.
Kruell, Fred'k John, M. D., 318 Milwaukee Ave., cor. W Erie St., Chicago, Ill.
Latz, Fred'k Wm., address unknown.
Lescher, Geo. C., address unknown.
Lumb, Abraham L., 4783 Main St., Frankford, Phila., Pa.
Mattern, Wm. K., M. D., cor. Tenth St. and Germantown Ave., Phila., Pa.
Miles, John Joseph, Vicksburg, Miss.
Powers, Fred'k B., Ph.D., University of Wisconsin, Madison, Wis.
Rienhamer, Frederick, Norristown Insane Asylum.
Stewart, Robert R., S. W. cor. Thirteenth and Fitzwater Sts., Phila., Pa.
Terrell, Thos. D., Columbia, Boone Co., Mo.
Tilton, Francis M., Haddonfield, N. J.
Walker, Samuel E , M. D., N. E. cor. Ninth and Catharine Sts., Phila., Pa.
Wellcome, Henry S., 8 Snowhill, London, Eng.

1875.

Bibby, Walter E., M. D , S. E. cor. York and Tulip Sts., Phila., Pa.
Beidler, Samuel McGill, 1043 Leithgow St., or Fourth and Girard Ave., Phila., Pa.
Boisnot, Henry S., 1311 Broadway, cor. Thirty-fourth St., New York City.
Braddock, Wm. N., S. E. cor. Third and Elm Sts., Camden, N. J.
Clark, Louis G., Portland, Oregon.
Hartwig, Chas. F , 476 Milwaukee Avenue, cor. Chicago Avenue, Chicago, Ill.
Hopp, Lewis C., care A. Mayell & Co., Cleveland, O.
Jones, Howard G , N. W. cor. Twelfth and Spruce Sts., Phila., Pa.
Justice, Richard S., Fifth and Elm Sts., Camden, N. J.
McRoberts, Wm. B., Stanford, Ky.
Means, Wm. B., M. D., Lebanon, Pa.
Messing, Jacob, Jr., 1009 East Grand St., Elizabeth, N. J
Miller, Charles M., Mansfield, Ohio (St. James Hotel Block).
Mitchell, Wm. S., 3501 Cottage Grove Ave., Chicago, Ill.
Patterson, James L., cor. Ridge Ave. and Twenty-second St., Phila., Pa.
Poley, Warren H., 5106 Germantown Ave., Phila., Pa.
Reimann, Louis P., M. D., N. W. cor. Fifth and Poplar Sts., Philadelphia, Pa.
Shamalia, Geo. M., Lambertville, N. J.
Taylor, Joseph Y., 1412 Walnut St., Phila., Pa.
Thorn, Henry P., Medford, N. J.
Voelcker, Rudolph F. G., 217 Market St., Galveston, Texas.
Walch, Robert H., 3400 N. Twenty-second St., Phila., Pa.

1876.

Baker, Walter T., N. W. cor. Nineteenth and Oxford Sts., Phila., Pa.
Baur, Hugo F., 180 West Madison St.,Chicago, Ill.
Bley, Alphonso A. W., care of John Bley, 2800 Frankford Ave., Phila., Pa.
Boerner, Emil L., Haas Block, Clinton St., Iowa City, Iowa.
Boileau, Wm. N. K., 4155 Main St., Frankford, Phila., Pa.
Bowen, Daniel A., Bridgeton, N. J.
Burge, James Oscar, Bowling Green, Ky., or Nashville, Tenn.
Dilg, Philip H., 225 Eighteenth St., Milwaukee, Wis.
Emanuel, Louis, cor. Second and Grand Sts., Pittsburgh, Pa.
Fleming, Wm. F., 28 Olive St., St. Louis, Mo.
Fry, Wilbur W., Wilkesbarre, Pa.
Gentsch, Daniel C., New Philadelphia, Ohio.
Griffith, Charles, Johnstown, Pa.
Groves, John D., M. D., S. E. cor. Front and Catharine Sts., Phila., Pa.
Herrmann, Ernest W., No. 716 Race St., Phila., Pa.
Keller, A. Henry, Sutton, Clay Co., Neb.
Kœhler, Otto F., 19 Risington St., cor. Chrystie, New York City.
Kœmple, Robert August, 1396 Second Ave., New York City.
Kolp, Jacob L., S. W. cor. Tenth and Buttonwood Sts., Phila. Pa.
Kram, George W., M. D., South Bethlehem, Pa.
Linthicum, Theodric, Helena, Ark.
Martin, John C., Fifth Ave. and Madison St., Chicago, Ill.
McFerren, Jeremiah D., N. W. cor. Twelfth and Chestnut Sts., Phila., Pa.
Merritt, Joseph W., Woodbury, N. J.
Mitsch, Geo. Joseph, St. Paul, Minn.
Mœnkemœller, Chas., cor. Twenty-second and Market Sts., Wheeling, W Va.
Murray, F. Marion, M. D., Buffington, Ohio.
Railey, Irvin (care Logan Railey), Versailles, Ky.
Risk, Clarence H., cor. Charles and Reed Sts., Baltimore, Md.
Ritter, John, M. D., 372 West Indiana St., Chicago, Ill.
Schrœder, Henry, cor. Milwaukee and Chicago Aves., Chicago, Ill.
Sommers, Richard M., S. E. cor. Fifteenth and Oxford Sts., Phila , Pa.
Stewart, Frank E., M. D., 721 S. 22d St., Phila., Pa.
Taylor, Walter A., No. 17 N. Pryor St., Atlanta, Ga.
Taylor, Winfield S., N. E. cor. Perry and Southard Sts., Trenton, N. J.
Toulson, Milbourne A., Chestertown, Md.
Trimble, Henry, 632 Marshall St., or 145 N. Tenth St., Phila., Pa.
Von Cotzhausen, Louis, N. E. cor. Twenty-fourth and Thompson Sts., Phila., Pa.

1876.

VonWittkamp, H. L., Jr., apothecary at House of Correction, Phila., Pa.
Warrington, Chas. W., N. W. cor. Fifth and Callowhill Sts., Phila., Pa.
Webber, Joseph Leroy, cor. Main and State Sts., Springfield, Mass.
White, Hugh, address unknown.

1877.

Ball, Wm. A., care A. A. Mellier, 709 and 711 Washington Avenue, St. Louis, Mo.
Bissell Emery G., Main St., Waterville Onedia Co., N. Y.
Brennecke, Robert, Watertown, Wis.
Burroughs, Silas M., 8 Snow Hill, London, Eng.
Christman, Harry W., Norristown, Pa.
Coxey, Joseph C., cor. Fifth and Mickel Sts., Camden, N. J.
Fisher, Henry, M. D., 1044 East Norris St., Phila., Pa.
Fulton, Joseph M., New London, Chester Co., Pa.
Landschutz, Peter, 660 S. Main St., Phillipsburg, N. J.
Martin, George, Jr., S. E. cor. Fifteenth and Oxford Sts., Phila., Pa.
Martin, John A., 967 N. Fifth St., cor. George, Phila., Pa.
Maulick, Wm. F., Columbia, Pa. (Lock Box 493.)
Oleson, Olaf Martin, Market St., Fort Dodge, Iowa.
Parker, Fred. H., McIntyre Pharmacy, Eighth and Broadway, Auburn, N. Y.
Ross, David W., N. W. cor. Cumberland and Sepviva Sts., Phila., Pa.
Scheehle, Geo. P., Jr., N. W. cor. Fifteenth and Christian Sts., Phila., Pa.
Schwartz, Arthur, Trenton, N. J.
Smith, Albert H., cor. Main and Chelton ave., Germantown, Phila., Pa.
Stevenson, Richard G., N. W. cor. Sixth and Market Sts., Camden, N. J.
Trupp, Louis, S. W. cor. Fourth and Brown Sts., Phila., Pa.
Weiss, Louis, M. D., Del Norte, Col. (care Sheppard & Weiss), Lock Box 70.
Wright, Geo. S. R., 4501 Frankford Ave., Frankford, Phila., Pa.
Zacharias, Isadore, Columbus, Ga.

1878.

Albright, Franklin P., S. W. cor. Franklin and Berks St., Phila., Pa.
Beetem, Jacob S., 7th and Market Sts., Wilmington, Del.
Brunner, Norman I., cor 4th and Arch Sts., Macon, Ga.
Bullock, Lawrence M., M. D., Upland, Pa.
Button, Chas. E., 1558 Wabash Ave., Chicago, Ill.
Drescher, August, cor. Bowery and Brill Sts., Newark, N. J.
Graybill, Peter, S. W. cor. Fourth and Scoll Sts., Covington, Ky.
Hall, Harry A., Danville, Ill.
Higgate, Wilford O., M. D., 4202 Lancaster Ave., West Phila., Pa.
Johnson, John G., Minneapolis, Minn.
Lilly, Chas. F., York, Pa.
Litz, Walter Kulp, 635 Broadway, N. Y.
Musser, Omar Henry, N. W. cor. Nineteenth and Arch Sts., Phila., Pa
Myers, Clayton R., Passaic, N. J.
Noss, Henry, Norwich, Conn.

1878.

Podolski, Louis A., S. W. cor. Sixth and Poplar Sts., Phila., Pa.
Porter, Geo. C., Hollister, Cal.
Prall, D. Elwyn, 111 S. Jefferson Ave., East Saginaw, Mich.
Reinecke, Ernest Wm., 1924 Carson St., South Side, Pittsburgh, Pa.
Ross, David H., N. W. cor. Almond and Norris Sts., Phila., Pa.
Shull, David F., 3928 Market St., West Phila., Pa.
Spenceley, C. E., N. E. cor. Seventh and Master Sts., Phila., Pa.
Strickler, Jacob, New Bloomfield, Perry Co., Pa.
Waterman, Benj. C., N. W. cor. Thirty-ninth and Aspen Sts., West Phila, Pa.
Weis, William, 306 N. Ninth St., Reading, Pa.
Wilson, Thomas W., Greeley, Colorado.

1879.

Alleman, Emanuel A., Milton, Pa.
Castleton, Edward L. E., Houston, Texas.
Costelo, David, 1121 Broadway, N. Y.
Curran, John P., Jr., S. E. cor. Thirteenth and Jefferson Sts., Phila., Pa.
Day, Wm. G., 4116 Haverford Ave., West Phila., Pa.
Fahnestock, Levi, 76 Wood St., Pittsburgh, Pa.
Frederick, John H., 24th and Lombard Sts., Phila., Pa.
Frey, Andrew G., Canton, O.
Fruh, Ernest, N. E. cor. Camac and Oxford Sts., Phila., Pa.
Jacobs, Joe, cor. College Ave. and Clayton St., Athens, Ga.
Jungman, Emil, S. W. cor. Fourth and Noble Sts., Phila., Pa.
Jones, Roland D., M. D., 2228 Green St., Phila., Pa.
Kelly, Patrick M., M. D., No. 1131 S. 20th St., Phila., Pa.
Levi, Alex. B., 21 Sutter St., San Francisco, Cal.
Lock, John H., M. D., N. W. cor Cedar and Huntingdon Sts., Phila., Pa.
Ott, Emile, S. W. cor. Fifth and Lombard Sts., Phila., Pa.
Plumer, Wm. S., Jr. 2340 Olive St., St. Louis, Mo.
Raab, Ernest P., Highland, Ill.
Rudolph, John M., N. W. cor. Tenth and Mifflin Sts., Phila., Pa.
Rush, Warren B., Oakland, Orange Co., Fla.
Siglinger, Chas. J., S. W. cor. Norris and Memphis Streets, Phila., Pa.
Simpson, Moses S., M. D., 1414 N. Second St., Phila., Pa
Smith, Henry G., Allentown, Pa.
Sprissler, Theodore, 601 South Ninth St., Phila., Pa.
Sterner, Oliver Henry, 335 Orthodox St., Frankford, Phila.
Troll, Conrad W., St. Clairville, Ohio.
Turner, Curtis W., 846 Broadway, New York City.
Vansant, Robert Hays, Trenton, N. J.
Williams, Fred'k T., S. W. cor. Thirteenth and Wood Sts., Phila., Pa.

1880.

Bassett, Fenwick H., 4410 Frankford Ave., Phila., Pa.
Beale, Chas., Glassboro, N. J.
Colton, Geo. Havens, Springfield, Mass. (care H. & J. Brewer.)

1880.

Daniels, Adam C., Union Ave., S. Pueblo, Col.
Dockstader, Wm., C., Montclair, N. J.
Ferdinand, Geo. A., Dubuque, Iowa.
Frisby, Frank, Bismarck, Dakota.
Fruh, Gustav A., N. E. cor. Camac and Oxford Sts., Phila., Pa.
Garman, Franklin S., Lykens, Pa.
Hartzell, Alfred K., Allentown, Pa.
Hoell, Conrad G., M. D., 202 Federal St., Camden, N. J.
Hoffa, John Wilson, cor. Ridge Ave. and Cedar St., Harrisburg, Pa.
Kern, James P., 1936 Mt. Vernon St., Phila.
Killingbeck, Wm. J., Camden, N. J.
Klemet, John, M. D., S. W. cor. Third and Columbia Ave., Phila., Pa.
Kohlerman, John Wm., S. W. cor. Seventh and Morris Sts., Phila., Pa.
Latan, Geo., cor. Brown and Buckeye Sts., Dayton, Ohio.
Luethe, Amandus J., Milwaukee, Wis.
Madison, Joseph S., care Gulic & Co., cor. Fourth and Main Sts., Terre Haute, Ind.
Miller, Wm. Moses, Tarboro', Edgecombe Co., N. C.
Paxson, Oric Henry, M. D., Christiana, Lancaster Co., Pa.
Pechin, Wm. Jos., 608 N. Thirty-seventh St., West Phila., Pa.
Reynolds, John B., N. W. cor. Amber and Dauphin Sts., Phila., Pa.
Roberts, Chas. H., 304 Arch St., Phila., Pa.
Ross, George R., Lebanon, Pa.
Schandein, Harry, 106 Market St., Phila., Pa.
Schimminger, Geo. W., 109 Twelfth St., Altoona, Pa.
Shelly, Jacob A., Mechanicsburg, Cumberland, Co., Pa.
Smedley, Harry L., D.D.S., M.D., Media, Pa.
Sombart, John E., M. D., Carthage, Jasper Co., Mo.
Stout, Chas. P., M. D., 865 N. Fifth St., Phila., Pa.
Strunk, Samuel Wm., East Broad Street, Quakertown, Pa.
Zeller, Chas. F., N. E. cor. Thirteenth and Walnut Sts., or 626 Wood St., Phila., Pa.

1881.

Baur, Jacob, Terre Haute, Ind.
Beuter, John, Wheeling, W. Va.
Berube, Louis N., Osceola Mills, Clearfield Co., Pa.
Bernhard, Chas. H., Elgin, Ill.
Brakely, Philip F. H., Bordentown, N. J., or cor. Broad and Ellsworth Sts., Phila., Pa.
Bye, Charles A., 4060 Chestnut St., West Phila., Pa.
Clabaugh, Alton, Altoona, Blair Co., Pa.
Clymer, Chas. W., 2140 N. 7th or 1363 Germantown Ave., Phila., Pa.
Cramer, Walter, Milwaukee, Wis.
Cressler, David W., Atchison, Kas.
Culler, Fred'k W., Akron, Ohio.
Douglass, Serrill, Bristol, Bucks Co., Pa.
Eberly, Frank H., N. W. cor. Twentieth and Spruce Sts., Phila., Pa.
English, Geo. H., 5033 Germantown Ave., Phila., Pa.
Genois, Louis, 1412 Walnut St., Phila., Pa.
Gerstacker, Michael, Cleveland, O.
Goebel, Jr , Geo., 1809 N. Twentieth St., Phila , Pa.
Gorgas, Geo. A., Harrisburg, Pa.
Gossling, Thomas R., S. W. cor. 17th and Carpenter Sts., Phila., Pa.

1881.

Gray, John F., Milton, Pa.
Gubbins, Chas. H., N. E. cor. Fifteenth and Race Sts., Phila., Pa.
Hæssig, Herman T., Cape May, N. J.
Hahn, John H., S. W. cor. Frankford Ave. and Vienna Sts., Phila., Pa.
Halloran, Frank M., Paducah, Ky.
Hamlin, Jr., Benj. B., Harrisburg, Pa.
Harper, Henry W., Fort Worth, Texas.
Hart, Joseph, 1614 N. Second St., Phila., Pa.
Hertsch, Bernhard A., 4010 Germantown Ave., Phila., Pa.
Hinchman, Walter L., 319 N. Third St., Phila., Pa.
Hoke, Willis, A. B., Martinsburg, W. Va.
Hunterson, Chas. B., Camden, N. J.
Ihrig, Theodore E., Fifth Avenue, (Oakland), Pittsburgh, Pa.
Jacoby, John W., West Chester, Pa.
Jenks, Wm. E., 160 N. Third St., Phila., Pa.
Kelly, Irving W., Trenton, N. J.
Knowlton, Geo. H., 744 Elm St., Manchester, N. H.
Krauter, Chas. H., 266 W. Federal St., Youngstown, Ohio.
Kooker, J. Leedom, cor. Armat Street and Willow Avenue, Germantown, Pa.
Lascheid, Peter W., 1322 Carson St., Pittsburgh, Pa.
Lawall, Edgar J., Catasauqua, Pa.
Linden, Washington E., 414 Prospect St., Cleveland, O.
Lœhle, John F., Reading, Pa.
Love, John Henry, 3742 Market St., West Phila., Pa.
Luerssen, Frank, Ninth and F Sts., N. W., Washington, D. C.
Manheimer, Edward A., 90 N. East St., Indianapolis, Ind.
Manz, Constanz, Lyons, Iowa.
Mayer, Wm. C., cor. Richmond and Crease Sts., Phila., Pa.
May, Chas. Henry, Piqua, Miami Co., O.
McClintock, Wm. C., Preston and Brown Sts., West Phila., Pa.
Mengle, Chas. W., address unknown.
Meyer, Frank B., Rensselaer, Ind.
Metzger, John B., Williamsport, Pa.
Miller, Samuel W., Blockley Hospital, West Phila., Pa.
Moise, Jr., Benj. F., 17 Rutledge St., Charleston, S. C.
Morgan, Jas. H., Tenth and Poplar Sts., Wilmington, Del.
Morgan, Frank E., N. E. cor. Sixteenth and Race Sts., Phila., Pa.
Nagle, Asher C., 266 West Federal Street, Youngstown, O.
Otgen, Gustav A., Summerville, S. C.
Pape, Wm. F., Dayton, O.
Rehfuss, Emil G., M. D., 1316 S. Broad St., Phila., Pa.
Reed, David R., Asbury Park, N. J.
Reimann, George, Buffalo, N. Y.
Roland, Geo. W., Bethlehem, Pa.
Rowe, Chas. E., cor. Lancaster Ave. and Forty-first St., Phila., Pa.
Scott, J. Harry, 1829 N. Eighth St., Phila., Pa.
Smith, Edward W., No. 3 Scott St., Williamsport, Pa.
Speakman, Wm. E., Woodbury, N. J.
Spengler, John G., Dayton, O.
Strater, Henry H., 90 Erie St., Cleveland, O.
Swope, Jas. Wills, 1612 W. Ninth St., Kansas City, Mo

1881.

Tag, William, N. W. cor. Judson Place and Berks Sts., Phila. Pa.
Tyree, Josiah S., Staunton, Va.
Warner, Jr., Wm. R., 1228 Market St., Phila., Pa.
Warne, H. L., Whitewater, Wis.
Weiss, Christian, S. W. cor. Sixth and Girard Ave., Phila., Pa.
Wilson, Matthew J., M. D., 1863 N. Front St., Phila., Pa.

1882.

Acker, Chas. N., N. W. cor. Third and Spruce Sts., Phila., Pa.
Boger, Jr., Cyrus Maxwell, address unknown.
Barkhuff, James Addison, Amsterdam, N. Y.
Bohn, Charles Henry, N. E. cor. Second and Poplar sts.
Clapp, Chambers Brown, Danville, Vermilion Co., Ill.
Clark, Jacob Miller, Parkersburgh, Pa.
Clemmer, Jonas Gerhard, 2209 Franklin St., Phila., Pa.
Coblentz, Virgil, Springfield, O.
Corrie, Wm. M. G., 4516 Lancaster Ave., West Phila., Pa.
Dare, Chas. Wm., Troy, Bradford Co., Pa.
De Frehn, Chas. Wm., 3950 Lancaster Ave., W. Phila., Pa.
Edwards, Howard Mell, 5033 Germantown Avenue, Germantown, Pa.
Forney, Chas. McClellan, cor. Perry and Southard Sts., Trenton, N. J.
Geiger, Jacob Franklin D., Boyertown, Pa.
Gentry, Overton Harris, Independence, Mo.
Goldsmith, Geo. W., 1311 N. Broad St., Phila.
Green, Howard L., 325 Ridge Ave., (Falls of Schuylkill), Phila.
Hayes, Robert G. H., M. D., Atlantic City, N. J.
Kohl, Emil John, Belleville, Ill.
Koser, Newton Alex., 951 Broadway, Oakland, Cal.
Kneedler, Harry Howard, S. E. cor. Fourth and Penn Sts., Reading, Pa.
Knouse, J. Hamilton, cor. North and Cowden Sts., Harrisburg, Pa.
Lambert, John Albert, 400 W. Michigan St., Indianapolis, Ind.
Lyman, David C., N. E. cor. 11th and Girard Avenue, Phila., Pa.
Matthes, Franklin A., 24 N. Eighth St., Lebanon, Pa.
Matthews, W. Leaming, M. D., 2454 Christian St., Phila., Pa.
May, Wm. Henry, Egg Harbor City, N. J.
Mehl, Wm. Henry, 511 Miami St., Leavenworth, Kas.
Merriam, Evan B., Binghampton, N. Y.
Mullhaupt, Alfred, M. D., St. Mary's, Elk Co., Pa.
Nixon, Wm. G., Chambersburg, Pa.
Ott, George Leonard, West End Pharmacy, Wilmington, Del.
Power, Edward Samuel, M. D., N. W. cor. 15th and Montgomery Ave.
Rambo, Ross, S. W. cor. Twelfth and Race Sts., Phila., Pa.
Raser, Geo. Prentice, 309, 311 N. Third St., Phila., Pa.
Renz, Gustav Adolph, Box 370, care of F. A. Rentz, St. Paul, Minn.
Reuting, Theodore Wm., 8 and 10 Diamond St., Titusville, Pa.
Reynolds, Wm. Davis, Mahanoy City, Pa.

1882.

Riggs, Chas. N., S. W. cor. Eighteenth and Chestnut Sts., Phila., Pa.
Roeschel, Wm. Ernest, Carthage, Mo.
Ross, Wm. Robinson, Lebanon, Pa.
Schambs, George M., Cleveland, Ohio.
Scheible, Fred'k Chas., 78 Gont St., Mobile, Ala.
*Seitz, John Geo., 43 Cherry St., Cleveland, O.
Scholl, Benjamin F., N. E. cor. Ninth and Race Sts., Phila., Pa.
Smith, Judson S., Tyrone, Pa.
Stahler, Eugene A., Bridgeport, Montgomery Co., Pa.
Stedem, F. W. E., N. W. cor. Broad and Fairmount Ave., Phila., Pa.
Steinhilber, Harry E., care Woodward, Foxon & Co., Kansas City, Mo.
Thomas, Daniel Judson, Scranton, Pa.
Thomas, Oscar Ernest (care Wm. C. Fisher), 123 Richardson St., Columbia, S. C.
Thoms, Herman E., 76 Northeast St., Indianapolis, Ind.
Way, Julius, South Seaville, N. J.
Webster, Henry, Hannibal, Mo.
Woolley, Stephen D., Asbury Park, N. J.
Woolston, Clifford M., Morristown, N. J.

1883.

Apple, Milton Shimer, 2301 N. Second St., Phila., Pa.
Armbrecht, Wm Charles, Wheeling, W. Va.
Arnold, Charles Fred'k, Sioux City, Iowa.
Bagge, Edward Everett, S. E. cor. Broadway and Walnut Sts., Camden, N. J.
Baker, Charles Henry, 238 E. Hanover St., Trenton, N. J.
Ballentine, Allen D., 4516 Mulberry St., or 4501 Main St., Frankford, Phila., Pa.
Balmer, John Henry, 3522 Germantown Ave., Phila., Pa.
Barr, Wm. Henry, Jr. (care Drake Bro.), Milwaukee, Wis.
Baumgardner, Chas. B., 1000 Seventh Ave., Altoona, Blair Co., Pa.
Benjamin, Samuel Neuman, Deckertown, N. J.
Bolton, Stephen Conklin, Watertown, N. Y., or 603 Gray's Ferry Road.
Boorse, Henry Augustus, Sterling, Ill.
Booth, Fred'k Smith, 1037 Richmond St., (cor. Richmond and Ball Sts.), Phila., Pa.
Boyd, Evan Garrett, New Castle, Del.
Brown, Jos. Henry, Morris, Grundy Co., Ill.
Browning, Robt. Craighead, Indianapolis, Ind.
Bruenchenheim, Byron Edwin, Milwaukee, Wis.
Butler, Geo. White, Bryn Mawr, Montgomery Co., Pa.
Campbell, Milton, 2041 Pine St., Phila., Pa.
Cheatham, Mathew Venable, Gainesville, Texas.
Coleman, Mimms Wm., Marion, Ala.
Craig, Clark Rankin, 21st and Mt. Vernon Sts., Phila., Pa.
Cuskaden, Albert Douglass, 1926 Atlantic Ave., Atlantic City, N. J.
Dare, John Henry, Bridgeton, N. J.
Davis, Harry Irvin, Hollidaysburg, Blair Co., Pa.
Davis, Wm. Henson, 4559 Main St., Germantown, or Second and Green Sts., Phila., Pa.
Deakyne, Harry Harttup, Atlantic City, N. J.
Dietrich, Howard Dickson, 1101 N. Third St., Harrisburg, Pa.
Dundor, Milton Jacob, 254 S. Ninth St., Reading, Pa.

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* Deceased June 21, 1885.

1883.

England, Joseph Winters, 800 S. Tenth St., Phila., Pa.

Fasig, Harry Buckley, 1501 Main St., Atchison, Kan.

Fell, Edgar Burnside, cor. Sixth and Market Sts., Wilmington, Del.

Fleming, Frank Byerly, Shippensburg, Pa.

Franciscus, Wm. Chas., Lock Haven, Pa.

Frangkiser, John Fred'k, Loudonville, O.

Frey, John Peter, N. W. cor. Front and Norris Sts., Phila., Pa.

Frey, John William, S. E. cor. Thirteenth and Montgomery Ave., Phila., Pa.

Fries, Chas. Jos. Valentine, Anoka, Minn., P. O. Box 169.

Gleim, Wm. B., Phila. Hospital, Phila., Pa.

Good, Harvey Jonas Tilghman, 917 Turner St., Allentown, Pa.

Gregg, Jr., Henry Hamilton, New Lisbon, O.

Guest, Samuel Stratton, Huntington House, Fort Scott, Kan.

Hahn, Gustave, N. W. cor. Third and Susquehanna Ave.

Hannon, Owen Burdette, Akron, Ohio.

Harris, Frank Pierce, Hamburg, Berks Co., Pa.

Harrison, Jas. Oliver, N. E. cor. Chase and Valley Sts., Baltimore, Md.

Hayhurst, Susan, M. D., Woman's Hospital, North College Ave. and Twenty-second St., Phila., Pa.

Helm, Jr., Gustav C. F., N. E. cor. Tenth and Spruce Sts., Phila., Pa.

Horsey, John Marshall, N. W. cor. King and Radcliffe Sts., Charleston, S. C.

Jones, Daniel R., 170 Wisconsin St., Milwaukee, Wis.

Jones, James Miles, 801 Penn St., Reading, Pa.

Johnson, Theodore Milton, Huntington, Ind.

Jungkunz, Wm. Fred'k, Freeport, Ill.

Kalmbach, Henry Geo., 1536 N. Fourth St., Phila., Pa.

Kempfer, Emil Frank, N. E. cor. 24th and Thompson Sts., Phila., Pa.

Kerr, Frank Gault, Marshall, Mo.

Kindig, Rudolph, cor. Frankford Ave. and Girard Ave.

Krider, James Delaplaine, 1400 Walnut St., Phila., Pa.

Lehman, Fred'k Charles, Washington St. Pharmacy, Bridesburg, Phila., Pa.

Leonhard, Louis Chas., Dayton, O.

Light, Wm. Wirt, Oregon, Ill.

MacNair, Whitmel Horne, Tarboro, N. C.

McCreight, Robt., 1242 Richmond St., Phila.

Maddock, Wm. Worrell, P. O. box 215, Chester, Pa.

Miller, Harold Baughman, Memphis, Tenn.

Miller, Turner Ashby, Danville, Va.

Norcross, Alfred Black, Trenton, N. J.

O'Brien, Christopher, Conshohocken, Pa., or Norristown Insane Asylum.

Ott, Charles William, cor. Lawrence and Dauphin Sts., Phila., Pa.

Quick, Jaques Voorhees, Jefferson Medical College, or Flemington, N. J.

Randolph, Chas. Fitz, Altoona, Pa.

Reeser, John Wesley, Curwensville, Clearfield Co., Pa.

Rickey, Chas. Frank, Mount Sterling, Ill.

Roedel, Wm. Ruthrauff, 543 N. Twenty-second St., Phila., Pa.

Roehrig, Geo. Fred'k, 2021 Turner St., Phila., Pa., (or Heintzelmann's Pharmacy).

Ruth, Wm. Augustus, Alliance, O.

Salot, Geo. Washington, care J. A. Mackimmer, 723 Fort St., West, Detroit, Mich.

1883.

Saunders, Wm. Edwin, 188 Dundas St., London, Ontario, Canada.

Scherling, Gustav, care of E. H. Biggs, St. Paul, Minn.

Scheffler, Jas. Samuel, Bangor, Northampton Co., Pa.

Schramm, Jr., Daniel, 1428 Stiles St., Phila., Pa.

Schmidt, Flor. Joseph, Evansville, Ind.

Seeler, Andrew Jackson, 1121 Shackamaxon St., Phila., Pa.

Sellers, Albert Tobias, 1635 N. Twentieth St., Phila., Pa.

Smith, Chas. Michael, S. E. cor. Eleventh and Master Sts., Phila., Pa.

Smith, Stephen Douglass, Birdsboro', Pa.

Souder, Lewis Reed, Atlantic City, N. J.

Steacy, Frank Hernlie, care Gail & Bleckie, Palmer House, Chicago, Ill.

Trusler, Chas. Lawrence, 190 Fort Wayne St., Indianapolis, Ind.

Walter, Wm. Henry, 2339 N. Fifth St., Phila., Pa.

Weber, Geo. Washington, Millville, N. J.

Weber, Reinhard Julius, Forty-third and Silverton Avenue, West Phila., Pa.

Werst, Allen Leidig, 2458 N. Second St., Phila., Pa.

Willard, Theophilus Newton, cor. Main and Cotton Sts., Manayunk, Phila., Pa.

1884.

Alexander, Frederick Wm., care of W. B. Moore, East Saginaw, Mich.

Allen, Charles Spencer, Bloomsburg, N. J., or Twenty-third and Master Sts., Phila., Pa.

Anderson, Harry Warren, Bath, Me.

Babb, Grace Lee (Mrs. Grace Lee Abbot), Eastport, Me., or 3345 Ridge Ave., Phila.

Barber, Harry Lee, 2558 North Seventh St., Phila., Pa.

Boynton, Wm. Carlton, Auburn, Me.

Cassell, William E., 1008 Ridge Ave., Harrisburg, Pa.

Chandler, Isaac Eugene, Kennett Square, Chester Co., Pa.

Clayton, Abraham Theophilus, 4920 Frankford Ave., Frankford, Pa., or Shoemakertown, Pa.

Cliffe, Wm. Lincoln, Kensington Avenue and Somerset St., Phila., Pa.

Coleman, John Joseph, cor. Market and Twenty-second Sts., Wheeling, W. Va.

Cook, Harry C., cor. Greenwood Ave. and N. High St., Columbus, O.

Cook, William Alexander, Americus, Ga.

Crawford, Joseph, Frankford Ave. and Hart Lane, Phila., Pa.

Crawford, Samuel Douglass, Nazareth, Pa.

Cress, Charles Thomas William, Butte, Montana.

D'Huy, Bernard H., Abilene, Kan.

Eberle, Eugene Gustav, care Dunning & Sumner, Madison, Wis.

Edwards, Charles Matthew, 121 N. Thirteenth St., Phila., Pa.

Falck, Milton Smoker, State Hospital for the Insane, Danville, Pa

Falk, John Charles, 966 Sixth Ave., New York City, N. Y.

Fetters, Wm. Anderson, N. E. cor. Third and Brown Sts., Phila., Pa.

Fetters, Frank Penicks, N. E. cor. Third and Brown Sts., Phila., Pa.

Fitzgeorge, George Thomas, cor. Broad and Market Sts., Trenton, N. J.

1884.

Follmer, Daniel, N. W. cor. Sixth and Buttonwood Sts., Phila., Pa.
Gano, Wm. Hubbell, Jr , N. E. cor. Thirteenth and Walnut Sts., Phila., Pa.
Goldbach, John, Toledo, Ohio.
Harper, Robert Newton, 1412 Walnut St., Phila., Pa.
Heiberger, Eugene Samuel, Allentown, Pa.
Hillan, John Michael, cor. Main and Centre Sts., Shenandoah, Pa.
Hinckley, Levi Ellsworth, Chagrin Falls, O.
Hoffman, Ephraim Zeigler, Maytown, Pa., or Cambridge, Md.
Houck, Calvin Jerome, Foxchase, Phila., Pa.
Houck, Oscar, 140 N. Seventh St., Phila., Pa.
Ischler, George Herman, 2053 Franklin St., Phila., Pa.
Judd, James Frederick, S. W. cor. Cedar and Huntington Sts., Phila., Pa.
Keller, George Dering, Carlisle, Pa
Keller, John William, Altoona, Blair Co., Pa.
King, Wm. H., N. E. cor. Eighth and Montgomery Ave., Phila , Pa.
Kinsey, Albert Henry, 632 N. Eighteenth St., Phila , Pa.
Klump, Geo. Lewis, Allentown, Pa.
Kusenberg, Louis Carl, Reading, Pa.
Kutzner, John Douty, Shamokin, Pa., or 1607 Ridge Ave., Phila., Pa.
Laubach, Wm. Harrison, Jr., 1315 Filbert St., Phila , Pa.
Leonard, Isaac Edward, White Haven, Pa.
Lowe, Clement Belton, N. E. cor. Ninth and Vine Sts., Philadelphia, Pa.
McCausland, James Ralston, S. W. cor. Eighteenth and Market Sts., Phila., Pa.
McConn, Wm. John, No. 117 E. State Street, Trenton, N. J.
McCoy, Franklin, No. 1197 Euclid Ave., Cleveland, Ohio.
Eleventh and Master Sts., Phila., Pa.
Maddock, Geo. Frederick, care of Geo. H. White, cor. Newark and Jersey Aves., Jersey City, N. J.
Martin, Emlen, Rancocas, N. J.
Miller, Harry Lovett, Jr., Morris, Ill.
Maguire, Andrew Herman Joseph, care of M. I. Shugard, 1010 Harrison St., Chicago, Ill.
Moerk, Frank Xavier, 1236 Callowhill St., Phila., Pa.
Moore, Christian, Ardmore, Pa.
Murjahn, Louis, 2801 Girard Ave., Phila., Pa.
Murtagh, John Anthony, 156 Center St., Germantown, Phila., Pa.
Nock, Thos. Oliver, Jefferson College Hospital, or 1602 Richmond St., Phila., Pa.
Oberholtzer, Chas. Herman, Phœnixville, Pa.
Osborne, Melmoth Mercer, S. W. cor. Eighteenth and Market St., Phila., Pa.
Pattengill, Evan Ingstrum, Elmira, N. Y.
Petrie, Edward Sing, 45 E. Mohawk St., Oswego, N. Y.
Pierce, William Chandler, 1202 King St., Wilmington, Del.
Plenge, Henry Charles, 37 Broad St., Charleston, S. C.
Pool, James Arthur, Earlville, Ill.
Reisert, William, 511 N. Eleventh St., Phila., Pa.
Rumsey, Walter Arabin, S. W. cor. Tenth and Green Sts., Phila., Pa.
Ryan, Frank Gibbs (Elmira, N. Y.), N. W. cor. Thirteenth and Market Sts., Phila., Pa.
Schroeder, Luther Johnson, Columbia, Pa., or Washington, D. C.

1884.

Schuldt, Henry Francis, 2565 Coral St., Phila., Pa.
Spangler, George Ellsworth, Ashland, Pa.
Stahl, B. Franklin, 1335 Vine St., Phila., Pa.
Streitz, Alexander Frederick, 1220 Davenport St., Omaha, Neb.
Sypherd, Clarence Draper, 4202 Lancaster Avenue, West Phila., Pa.
Tedford, Edward Weeks, Maryville, Tenn.
Trist, Edwin Allen, 928 South Ninth St., Phila., Pa.
Urben, Fred. Lang, 2126 Sidney St., south side, Pittsburgh, Pa.
Vaughan, Parry Wyche, Durham, N. C.
Watson, William Porter, Clearfield, Pa.
Weaber, John Alvin, Fredericksburg, Lebanon Co., Pa.
Weirich, George Alcimus, 2321 Ridge Ave., Phila., Pa.
Wenner, Alfred Jefferson, 346 Pine St., Camden, N. J.
Wickham, Anthony Smith, 1104 Chestnut St., Phila., Pa., or Wheeling, W. Va.
Wilson, Elmer Ellsworth, 4060 Germantown Ave., Phila., Pa.

1885.

Bartel, Max, No. 1126 Vliet St., Milwaukee, Wis.
Beckberger, Henry, No. 835 Perry St., Sandusky, Ohio, or Cleveland, Ohio.
Bichy, William, No. 5561 Germantown Ave., Phila. Pa.
Bissell, Wayne Barker, Waterville, N. Y.
Bozenhard, Wm. Theo., Dayton, Ohio.
Brandner, Henry, Jr., Atchison, Kan.
Brown, Albert Edward, No. 29 Monroe St., Mobile, Ala.
Cadmus, Robert Clark, No. 1118 Spring Garden St., Phila., Pa.
Carnan, Geo. Lewis, No. 5033 Germantown Ave., Phila., Pa.
Cooley, James Sherman, No. 1242 Richmond St., Phila., Pa., or Flemington, N. J.
Davis, Fred'k Horace, No. 1602 Richmond St., Phila., Pa.
Davison, Blythe James, Canton, Pa.
Deakyne, Oscar Boone, Wilmington, Del.
Denniston, Wm. Milliken, Hollidaysburg, Pa.
Deuschle, Wm. D., Chilicothe, Ohio.
Dickeson, Morton Phelps, Media, Pa.
Dielman, Lewis Henry, New Winsor, Md.
Dunbar, Thomas, Jr., No. 1414 South Sixth St., Phila., Pa.
Ebeling, George Henry, Wheeling, W. Va.
Eberly, Jacob Addison, N. E. cor. Seventh and Spring Garden Sts., Phila., Pa.
Eldredge, Joseph Johnson, Cape May City, N. J.
Engler, John George, No. 376 Asylum St., Hartford, Conn.
Feairheller, Theodore, No. 2414 Sharswood St., Phila., Pa.
Fienhold, Edward Henry, 2024 N. Second St., Phila., Pa.
Gebhard, Adolf Emil, Muskegon, Mich.
Gehris, Peter Spang, No. 728 N. Seventh St., Phila., Pa., or Reading, Pa.
Green, Benjamin Wallace, N. E. cor. 38th and Lancaster Ave., W. Phila., Pa.
Haffa, George Adam, No. 1023 Fairmount Ave., Phila., Pa.
Hagenbuch, James Hervey, Mahanoy City, Pa.
Hamilton, Wm. Swearingen, Fairmont, W. Va.

1885.

Hammond, Arthur Browne, 2326 Lombard St., Phila., Pa.
Harrington, Silas Marion, Plano, Collin Co., Texas.
Harper, Wm. Franklin, Madison, Ind.
Hassler, Daniel Herr, Carlisle, Pa.
Heider, Henry George, S. E. cor. Second and Thompson Sts., Phila., Pa.
Heinitsh, Henry Ernest, No. 919 Parrish St., Philadelphia, Pa.
Hess, Edwin Hutter, Harrisburgh, Pa.
Howells, James Owen, Bridgeport, Ohio.
Hunter, James Stanton, Pittsburgh, Pa.
Keller, Alexander George, No. 107 Race St., Philadelphia, Pa.
Kuehnel, Gustav Frank, No. 900 Callowhill St., Phila., Pa.
Kyner, Jos. Almer, Orrstown, Pa., or 13th and Locust Sts., Phila., Pa.
Lautenbacher, Irvin Lincoln, Schuylkill Haven, Pa.
Laval, Wm. John, Evansville, Ind.
Lewis, Llewellyn Hughes, No. 325 West Second St., Chester, Pa.
Lochman, Chas. Napier, Bethlehem, Pa.
Maisch, Henry Charles Christian, 747 N. Fortieth St., W. Phila., Pa., or care of C. W. Grassly, 12th and Halstead St., Chicago, Ill.
Malatesta, Joseph Mark, No. 742 S. Eighth St., Phila., Pa.
Matter, Robert Borton, Lewistown, Pa.
Mauch, Chas. Milton, Jr., Hellertown, Northampton Co., Pa.
May, Rollin R., Thirteenth and Morris Sts., Phila., Pa.
Mayer, Chas. Eugene, Boyertown, Pa.
Meissner, Paul Ernest, Milwaukee, Wis.
Mitcheson, Robert Stockton Johnson, No. 1522 N. Fifteenth St., Phila., Pa.
Morse, Frank, Hanover, Ind.
Moses, Matt., U. S. Grant, Trenton, N. J.
Mount, Elmer Marshall, Wilmington, Del.
Moyer, Edward Oliver, N. E. cor. Ninth and Vine Sts., Phila., Pa.
Naudain, Edgar Harman, Wilmington, Del.
Nebinger, Jacob Lewis, N. W. cor. Eighth and Cumberland Sts., Phila., Pa.
Newton, John W., Gallipolis, Ohio.
Odenwelder, Henry Louis, Easton, Pa.
Patterson, Albert Raymond, 206 Broad St., Trenton, N. J.
Peters, Leopold, Fulton, Whiteside Co., Ill.
Reagan, Dennis, S. E. cor. 11th and Master Sts., Phila., Pa.

1885.

Rebner, Charles Morris, Atchison, Kan.
Rebsamen, Chas. Frederick, No. 2349 Thompson St., Phila., Pa.
Reinnoldt, Henry Otto, Sheboygan, Wis.
Rhoads, Wm. Stevens, Houtzdale, Pa.
Riggs, Elias Ellsworth, Heightstown, N. J.
Roberts, Jos. Cattell, Wilmington, Del.
Rosenzweig, Benjamin, care Chas. Runz, 6th Ave., cor. 48th St., New York City.
Saunders, Henry Scholey, London, Canada, (Ont).
Schaible, Emil, No. 87 Columbia St., La Fayette, Ind.
Schlegel, Carl Edward, Davenport, Iowa.
Schofield, Allen Curtis, Piqua, Ohio.
Schuchard, Herman Julius, care of F. Kalteyer & Son, San Antonio, Texas.
Sailer, Wm. Frederick, No. 306 York St., Phila., Pa.
Serfass, Abraham Lincoln, Easton, Pa.
Sher, Frederick Paul, No. 328 N. Second St., Camden, N. J.
Smith, George Mark, No. 1233 Walnut St., Phila., Pa.
Swann, Samuel Davis, Fernandina, Fla.
Swain, Harry, No. 1347 S. Sixth St., Phila., Pa.
Stermer, John Henry, S. E. cor. Twelfth and Spring Garden Sts., Phila., Pa.
Stiles, Henry Lippincott, No. 215 N. Third St., Camden, N. J.
Stoll, Samuel Franklin, Crestline, Ohio, or Newton, Iowa.
Thompson, Wm. Cochran, Coatesville, Pa.
Trefry, Thos. Crowell, No. 10 Park St., New Haven, Conn.
Van Buskirk, Samuel Levick, No. 2301 N. Second St., Phila., Pa.
Vannort, William Augustus, No. 1815 Judson St., Phila., Pa.
Von Achen Frank Herman, Peoria, Ill.
Webster, Samuel C., P. O. Box 399, Media, Del. Co., Pa.
Wegener, Henry J., Neenah, Wis.
Weisel, Benjamin Franklin, Elizabeth City, N. C.
Williams, Neri Barndt, Easton, Pa.
Whilden, Charles Bennett, S. E. cor. Wentworth and Pitt Sts., Charleston, S. C.
Windolph, J. Frederick, No. 1300 S. Fifth St., Phila., Pa.
Wood, Alfred C., Hatboro, Pa., or Chestnut Hill, Phila.
Wright, James Edward, No. 1522 Fairmount Ave., Phila., Pa.

1830	1	1860	7	1873	46
1842	1	1861	4	1874	32
1844	3	1862	14	1875	23
1845	1	1863	10	1876	42
1849	1	1864	10	1877	23
1850	1	1865	21	1878	26
1853	2	1866	22	1879	29
1854	4	1867	26	1880	33
1855	8	1868	36	1881	76
1856	2	1869	23	1882	56
1857	6	1870	19	1883	94
1858	1	1871	7	1884	85
1859	6	1872	16	1885	99

Whole number……936

JUNIOR EXAMINATIONS.

SESSION 1884–1885.

First Junior Examination was held Saturday afternoon, November 8th, 1884:—

RULES TO BE OBSERVED.

The answers to each branch must be written *on separate pieces of paper*, the branch specified thereon, and handed in when completed.

Commence the answer of each sub-division of the queries with a new line, and with its corresponding number.

Each paper must be headed by the name of the student, and the number of his desk.

Time allowed for writing the answers to the queries—from three until eight o'clock, P. M.

Books or written memoranda are not allowed; nor is any intercourse whatever between the candidates permitted.

Time allowed for examining specimens—fifteen minutes.

The use of chemical reagents is not allowed.

The officinal names of the specimens should be given.

Questions must be asked, and will be answered aloud, in the hearing of the entire class.

BOTANY AND MATERIA MEDICA.

1. What compounds are necessary for the *formation of cells?* Explain the beginning, formation and growth of a cell.
2. What is the difference between a *closed* and an *open fibrovascular bundle?* Which of these fibrovascular bundles are found in the stem of a monocotyledonous, and of a dicotyledonous plant?

PHARMACY.

1. If the *specific gravity* of alcohol is 0.820 at 15.6° C. (60° F.), how much will the water weigh at the same temperature, which will exactly fill a bottle holding 205 grains of such alcohol?
2. Define the process of *trituration*, and write out a description of the *mortars* and *pestles* in use for all purposes of comminution, naming the substances that these implements are usually made of; the special uses of mortar and pestle made from each substance; the best shape for each kind; the reason for selecting the shape, and the prominent defects in the manufacture of many found in commerce.

CHEMISTRY.

1—*a*. Describe the *thermometer*, and state its uses.
b. In what respects do the two *thermometer scales* recognized by the Pharmacopœia differ from each other?
c. Give the formulas for converting the readings of one scale into those of another.
2—*a*. What is *magnetism?*
b. Give the distinction between a *native magnet*, an *artificial magnet*, and an *electro-magnet?*

Second Junior Examination for 1884–1885 was held Saturday afternoon, December 13th, 1884:—

BOTANY AND MATERIA MEDICA.

1. Give a description of the *fertilization* of the ovule of a phanerogamous plant.
2. Explain briefly the principles upon which the *artificial system* of classification by Linne is based.

PHARMACY.

1. Define the processes of *evaporation, distillation,* and *sublimation*, and state how sublimates may be obtained in hard masses, in long crystals, in small particles.
2. Name the *systems* in which *crystals* are classed. Describe three methods of obtaining crystals, and give examples of chemical substances obtained by each method.

CHEMISTRY.

1—*a*. Write two reactions, using the symbols for the preparation of *Chlorine Gas?*
b. Describe the experiments illustrating the affinity of Chlorine for Hydrogen.
2—Define an *acid*, a *base* and a *salt*, and give an example of each.

Third and Final Junior Examination for 1884–1885 was held Saturday afternoon, February 14th, 1885:—

BOTANY AND MATERIA MEDICA.

PROF. JOHN M. MAISCH.

A.

1. *Lobelia*. Give the botanical name and *habitat* of the plant. Describe it (stem, branches, leaves, calyx, corolla, stamens, ovary and fruit). Give its medical properties and dose.
2. Give the botanical characters of the natural order of Urticaceæ. What difference is observed between *American* and *Indian* Cannabis? Give the medical properties and the dose of the Extract of Cannabis.

PHARMACY.

PROF. JOSEPH P. REMINGTON.

B.

1. Describe four methods of preparing Syrups; give the advantages and disadvantages of each method, with illustrations of four officinal Syrups, indicating in each case the reason for the preference given to the adopted method.
2. How is Liquor Potassæ prepared by the first process given in the U. S. Pharmacopœia; explain he various steps in the process, and give the reason for selecting the Salt of Potassium which rected. What is the chemical composition of the residue?

CHEMISTRY.

PROF. SAMUEL P. SADTLER.

C.

1. What is a *Sulphate,* a *Sulphite,* a *Thio-sulphate?* Give the chemical formulas of the free Acids in each case, and of the two salts of each.
2. Enumerate the natural varieties of *Carbon,* and the artificial prepared varieties, stating with each of the latter how it is prepared.

COMMITTEE.

D.

1. How do *Atoms* differ from *Molecules?*
   What is the difference between an *elementary* and a *compound* molecule?
   What name is given to the force which causes the combination of atoms?
   How does this force differ from cohesion?
   How is matter affected by heat?
2. Describe the process of maceration.
   State in what class of Pharmacopœial preparations it is preferable to percolation.
   Explain the principle of circulatory displacement.
   Illustrate its application.
3. Give the botanical name, natural order and habitat of the plants which yield the following drugs, specify the part used, and state the officinal title of each drug, viz.: Lavender, Elder, Indian Hemp, Pulsatilla, Orange Flowers. (*Fill up the accompanying schedule for your answer*).
4. Describe the physical properties of *Chlorine?*
   Name the combinations which Chlorine forms with Oxygen and with Hydrogen, and give the symbols.
   What is the officinal preparation of Chlorine?
   Give the method of its preparation.
   How may Chlorine be detected when in combination with a metal?

The specimens for examination and recognition were as follows:—

Arithimis,
Mentha Piperita,
Sambucus,
Aqua Carui,
Syrupus Zingiberis,
Extractum Ergotæ Fluidum,
Ferri Sulphas,
Sulphur Præcipitatum,
Potassii. Bromidum,
Alcohol.

The Practical Examination took place in the forenoon of the same day, February 14th, 1885, and was as follows :—

1. Percolate 4 oz. av. of Ground Gentian with one pint of water.
2. Make 1 oz. of Mercurial ointment from one set of the materials before you :—

Mercury,	240 gr.
Lard,	120 gr.
Suet,	120 gr.
Comp. Tinct. Benzoin,	30 drops.
Mercurial Ointment,	50 gr.

Be careful to label the receiving bottle and the box containing the ointment with ***your name and number.***

SENIOR EXAMINATION.

The Examination of the Senior Class commenced on Thursday, February 26th, 1885, and closed with practical examinations in Operative Pharmacy and Analytical Chemistry, on Tuesday, March 3d, 1885 :—

RULES TO BE OBSERVED.

Commence the answer to each sub-division of the queries with a new line, and with its corresponding number.

Each paper must be headed with the name of the student, and the number of his desk.

Time allowed for writing the answers to the queries—from three until eight o'clock, P. M.

Books or written memoranda are not allowed ; nor is any intercourse whatever between the candidates permitted.

The use of chemical reagents is not allowed.

Time allowed for examining specimens—fifteen minutes.

The officinal names of the specimens should be given.

Questions must be asked and will be answered aloud, in the hearing of the entire class.

The questions in the different branches are as follows :—

MATERIA MEDICA AND BOTANY.

Thursday, February 26, 1885.

PROF. JOHN M. MAISCH, Ph. D.

A—*Rhatany Root.* Give the botanical names, natural order and habitat of the plants yielding Rhatany. Describe the drug, and point out the distinguishing characters of the officinal varieties. Give the constituents, the medical properties, and the dose.

B—Define *Aconite* of the Pharmacopœia ; name the plant, its natural order and habitat. Describe the physical characters and the structure of the drug. Give the approximate per centage of the alkaloids, and name the constituents. What are the medicinal properties, and the dose of the drug?

C—*Wild Cherry.* Give the officinal name of the drug, and the botanical name, natural order and habitat of the plant. Describe the drug, give its constituents, the reaction and approximate percentage of poisonous principle resulting in the presence of water, and explain the difference of the drug collected in spring and in autumn. What are the medicinal properties and dose?

D—*Uva ursi.* Give the name, natural order, and habitat of the plant ; describe the drug, name the constituents, and state which of these possess a bitter taste, and to which the diuretic and the astringent properties are due. Name some other leaves containing the same principles.

E—Define *Conium* of the Pharmacopœia, and give the name, natural order and habitat of the plant. Describe the physical characters and structure of the drug; give the approximate percentage of alkaloids, and characterize these briefly as to their physical and poisonous properties. What is the dose of Conium, and how is it distinguished from Anise?

F—*Capsicum.* Give the name, natural order and habitat of the plant, describe the drug, and point out the difference in size and shape of the fruits of other species; give the acrid and other constituents, the medicinal properties and dose of the drug.

G—*Stramonium Seed.* Give the name, natural order and habitat of the plant, describe the drug and its internal structure, give its medicinal properties, dose, and the approximate percentage of alkaloids, also a distinguishing test for the two alkaloids.

H—Define *Kamala* of the Pharmacopœia, and give the name, natural order and habitat of the plant. Describe the drug, including the structure of its different portions, name its solvents, constituents, and the amount of ash yielded, and give its medicinal properties and dose.

I—Name the officinal *Gum resins of the Umbelliferæ;* give for each the botanical name and habitat of the plant, and briefly describe the drug. Give the approximate proportion of the chief constituents, and state which of the volatile constituents contain sulphur, and which are free from it.

K—*Spanish Flies.* Give the name, order, habitat, and mode of collection of the insect, and the approximate percentage of the vesicating principle, with a process for preparing it. In what respects do Chinese blistering flies differ from the officinal drug?

Specimens:—(Officinal names required.)

Spigelia,
Rhus Toxicodendron,
Quassia,
Senna,
Frangula,
Taraxacum,
Scoparius,
Lycopodium,
Physostigma,
Anisum.

QUESTIONS IN THEORY AND PRACTICE OF PHARMACY.

Friday, February 27, 1885.

PROF. JOS. P. REMINGTON, Ph. G.

A—1. Name the officinal liquid, of which 25 grammes measures 20 C. C. at 4° C.
2. How many grains of mercury will a bottle hold which contains exactly a pint of water at 60° F.?
3. Name, and give the specific gravity of the heaviest liquid for which the Pharmacopœia details a process for manufacture.
4. Write out the process for this preparation.

B—Give the unabbreviated officinal names, ingredients, outlines of process, and describe the appearance of *Black Draught, Simple Elixir, Lugol's Solution, Cold Cream, Spermaceti Cerate, Hoffman's Anodyne, Compound Spirit of Juniper, Compound Syrup of Sarsaparilla.*

C—Give the English names, ingredients, outlines of process, and describe the appearance of *Infusum Digitalis, Liquor Ferri Subsulphatis; Emplastrum Ammoniaci cum Hydrargyro, Syrupus Scillæ Compositus, Tinctura Cinchonæ Composita, Unguentum Gallæ, Spiritus Ætherus Nitrosi, Pulvis Antimonialis.*

D—Give the officinal name, quantities and ingredients for one pound avoirdupois of *Aromatic Powder, Cerate,* and *Tincture of Opium?*

E—What is *Pectose?* Name several substances which contain it. What is the effect of the action of heat and acids upon it? What expedient is resorted to, in officinal processes, to overcome the effects produced by its presence in drugs?

F—Give the process, specific gravity, tests of purity and identity of the following:—*Stronger Ether, Alcohol, Carbolic Acid.*

G—Give the tests for recognizing *Veratrine, Polygalic Acid, Colchicine, Strychnine. Meconic Acid.*

H—Of the following six liquids which are the best solvents for *Tannin,* namely:—Water, Absolute Alcohol, Chloroform, Glycerin, Absolute Ether, Boiling Water. Place the solvents in the order of their solvent power, beginning with the best.

I—How is Diluted Hydrocianic Acid prepared?
What is the standard of strength adopted by the U. S. Pharmacopœia?
In what important respect does the present formula differ from that of the U. S. P., 1870?
In what officinal Syrup is this Acid found?
Why is it present in this Syrup?

Name the active substance produced when ground Black Mustard Seed is treated with water, and state how it is produced.
Describe the process for an officinal preparation whose virtues depend upon the presence of this active substance.
K—Describe the theory of Emulsification Name a natural emulsion, and describe its structure.
Give three practical formulas illustrating three different methods of preparing emulsions.
State the circumstances under which it would be best to use each method.

Specimens :—(Officinal names required.)

Pulvis Cretœ Compositus,
Liquor Pepsini,
Pulvis Rhei Compositus,
Syrupus Rosæ,
Extractum Ergotæ Fluidum,
Infusum Digitalis,
Unguentum Hydrargyri,
Vinum Aromaticum,
Tinctura Saponis Viridis,
Tinctura Aloes et Myrrhæ.

QUESTIONS IN CHEMISTRY.

Saturday, February 28, 1885.

PROF. SAMUEL P. SADTLER, Ph. D.

A—1. Define a neutral salt—an acid salt—a basic salt—a double salt.
2. Give examples of each of these classes.
B—1. What is the chemical formula of *Alumen?*
2. In what respect does the *Alumen* of the U. S. P., 1880, differ from the *Alumen*, U. S. P., 1870?
3. How is *Alumen Exsiccatum* made?
4. What are the properties of the metal contained in each of these compounds?
C—1. Give the chemical formula of *Argenti Nitras*, and describe the officinal preparation.
2. What is the composition of *Argenti Nitras Dilutus?* Of *Argenti Nitras Fusus?*
D—1. What is "*Chili Saltpetre?*"
2. What differences in properties do we find between this compound and common Saltpetre?
3. Which is the more advantageous for use in the manufacture of Nitric Acid? Give reasons for this preference.
4. State the important technical uses of each of these two compounds.
E—1. What is the composition of "Salt of Tartar?"
2. By what process is it made, and from what material?
3. From what source do we obtain "Cream of Tartar?"
4. Give its chemical formula, and that of "Tartar Emetic."
F—1. Give the distinction between *ferrous* and *ferric* salts.
2. Give examples of each class, using officinal compounds only.
3. How can ferrous be converted into ferric compounds?
4. What officinal processes make use of such methods?
G—1. Give the formulas of *Acidum Oxalicum, Acidum Oleicum, Acidum Valerianicum, Acidum Tartaricum, Acidum Citricum.*
2. Give the formula of a salt of each of these acids.
H—1. What is fermentation?
2. Mention the several kinds of fermentation, and state the products of each.
3. Explain how starch-containing cereals are capable of fermenting.
4. Mention some industries based upon fermentation processes.
I—1. What is the chemical difference between an essential oil and a fatty oil?
2. What differences are there in their physical properties?
3. From what natural sources are the two classes respectively obtained?
4. What are the pharmaceutical and technical uses to which each class is applicable?
K—1. What is a *Glucoside?*
2. By what reactions are they to be distinguished?
3. Mention some officinal drugs of which the active principle is a Glucoside.
4. Mention some Glucosides which yield officinal compounds as their decomposition products.

Specimens :—(Officinal names required.)

Potassii Permanganas,
Plumbi Acetas,
Potassii Bi-Carbonas,
Potassii Chloras,
Sodii Bi-Carbonas,
Zinci Acetas,
Benzinum,
Magnesii Carbonas,
Ammonii Chloridum,
Acidum Aceticum.

QUESTIONS BY EXAMINING COMMITTEE.

Monday, March 2, 1885.

WM. J. JENKS, Ph. G., Chairman.

A—1. Give the process for making *Yellow Oxide of Mercury.*
2. State what precautions are necessary, and the reasons why.
3. Give its officinal title.
4. What officinal preparation does it enter into?
5. How does it differ from the *Red Oxide of Mercury?*
6. Give the process for the manufacture of *White Precipitate.*
7. What precaution must be observed in making it?
8. What is its chemical composition?
9. Into what officinal preparation does it enter?
10. Describe the process for the manufacture of *Citrine Ointment*, and explain the chemical changes which take place.

B—Give the *Officinal Name, Natural Order* and *Habitat* of five dicotyledonous plants which yield officinal rhizomes. Name the important constituents, and medicinal properties of each. (*Fill up the Schedule B for your answer*).

C—1. Give the formula of the compound which is formed when Ammonium Sulphide is added to a Salt of Aluminium.
2. How is Aluminium separated from iron?
3. How is iron separated from zinc?
4. Give the color and formula of each of the precipitates produced by Sulphuretted Hydrogen on Salts of the following metals in acid solution:—*Mercury, Arsenic, Antimony.*
5. State how Calcium Salts may be detected in Sulphate of Magnesium.

D—1. Give the botanical name and natural order of the plant from which Almonds are obtained.
2. Briefly describe the physical properties and structure of the seed.
3. What are the chief constituents of Almonds?
4. In what important constituent do the two varieties differ?
5. Explain, in words or symbols, the chemical reaction which occurs when powdered bitter Almonds are macerated with water.
6. What two officinal *products* are obtained from Almonds?
7. Into what officinal preparations do these *products* enter?
8. Into what officinal preparations do *Almonds* enter?

E—1. Name three officinal *Fluid Extracts*, each made with a different menstruum.
2. Give the proportions of the liquids composing the menstruum in each case.
3. State why such variations are necessary.
4. Why is maceration for a specific period directed in making Fluid Extracts?
5. How much finished Fluid Extract is obtained from a kilogramme of drug?

F—1. Give the officinal name, natural order and habitat of the plant which yields *Hops?*
2. Describe the physical properties and structure of Hops, and name an officinal preparation into which they enter.
3. What other officinal substance does the plant yield, and from what part is it obtained?
4. Give its physical and medicinal properties, and important constituents.
5. What officinal preparation does it enter into?

G—1. Name the ingredients which enter into the composition of the following preparations; state briefly the mode of preparation, and give the officinal title and dose of each:—*Dover's Powder, Spirit of Mindererus, Donovan's Solution, Brown Mixture, Compound Cathartic Pills.* (*Fill up the Schedule G for your answer.*)

H—1. Name the article of commerce from which *Cream of Tartar* is purified.
2. State from what source this article is derived, and in what manner it is formed,
3. What impurity is always found in it?
4. Describe briefly a process of purification.
5. What takes place when a boiling solution of Cream of Tartar is allowed to cool, and why?
6. What are the chemical constituents of Cream of Tartar?
7. What is its officinal title?

I—1. How should this prescription be compounded?

℞	Ammon: Carb.,	ʒiss
	Syrup: Scillæ,	f ℥iss
	Pulv: Acaciæ,	ʒiii
	Aquæ,	f ℥iiss

M: ft: mist.
Signa:—Take a teaspoonful every four hours.

2. Criticise the following prescription:—

℞	Quininæ Sulph.,	gr. xxxii
	Acid. Sulph: Aromat.,	gtt lxiv
	Aquæ,	f ℥ii
	Spt: Ammon: Aromat.,	f ʒii

M: ft: mist.
Signa:—Take a teaspoonful every four hours.

3. How should this ointment be prepared?

℞

Iodi.,	℈i
Extract: Opii.,	gr x
Camphoræ,	gr xv
Extract: Bellad: Alc.,	℈i
Adipis Benzoinat,	℥i
ft: ung.	

Signa:—Apply as directed.

K—4. How would you prepare this prescription? What quantity of each active ingredient is contained in a dose? Would you dispense it? Give your reasons why.

℞

Strychninæ Hydrochlorat,	gr i
Hydrarg: Chlorid: Corrosiv.,	gr ii
Liq: Acid: Arseniosi,	f ʒii
Tinct: Ferri Chlorid.,	f ʒiv
Syrupi.,	f ℥ii
Elixir Aurant, *ad*	f ℥viii
ft. mist.	

Signa:—A tablespoonful three times a day.

5. How should this prescription be prepared? What reactions occur? What will the solution contain when finished? Is the dose a proper one?

℞

Argenti Cyanid,	gr xxx
Acid: Hydrochloric,	gr xxv
Aquæ Destillœtæ,	gr cclxxv
Misce.	

Signa:—Take sixty drops three times a day in a tablespoonful of water.

6. Write out the full name of each ingredient, and the direction for use.

℞

Hyd: Chlor:	
Mur: Hyd., āā	℈i
Acaciæ Pulv.,	ʒiv
Aq. Camph.,	f ℥viii
Misce.	

Signa;—Injection. Use t. d.

Specimens:—(Officinal names required).

Quassia,
Nux Vomica,
Plumbi Oxidum,
Pimenta,
Aqua Camphoræ,
Unguentum Resinæ,
Terebinthna,
Potassii Ferrocyanidum,
Tinctura Myrrhæ,
Alumen.

PRACTICAL EXAMINATION OPERATIVE PHARMACY

Tuesday, March 3, 1885.

Time allowed, two hours.

Each student was required to prepare the following preparations, and write the number of desk, and their name upon each label:—

1. GRANULATED SALT.

Salicylic Acid, 105 gr.
Carbonate of Sodium Pur., 100 gr.
Make Salicylate of Sodium.

2.

LOZENGES.

Pulv. Potass. Chlor.	gr. cxx.
Pulv. Sacch. Alb.,	gr. ccclx.
Pulv. Tragacanth,	gr. xx.

Make 24 lozenges—put the lozenges with the residue in the box.

3.

EMULSION.

Make four fluid ounces of 50 per cent. emulsion of Cod Liver Oil, using the proper quantities of oil, acacia, and water.

4.

OINTMENT.

Mercury,	37 gr.
Nitric Acid,	½ fl. dr.
Nitric Acid,	¾ fl. dr.
Lard Oil,	1 fl. oz.

Make ointment of nitrate of mercury by the officinal method.

5.

PLASTER.

Spread a 6 x 4 Soap Plaster.

The Practical Examination in Analytical Chemistry followed the above, and consisted in determining the acids and bases in a solution composed of a number of salts. The following is an example of those given:—

Bases, ... Sb, Fe, Zn K, Na
Acids, ... $H_2C_4H_4O_6$, $H\,NO_3$ $H\,Cl$, $H_2\,SO_4$

The competitive examination of drugs with the microscope for the John M. Maisch prize by those candidates who had passed a "very satisfactory" examination in Materia Medica, including specimens, was conducted by John E. Cook, Ph. G., assistant professor, 12 candidates being entitled. The microscopic specimens selected were *Senega, Zingiber, Calamus, Cinchona* (*Micrantha*), *Anisum, Carum, Linum, Hyoscyami Semen, Lycopodium, and Marantæ Amylum.* One of the candidates recognized all 10, one 9, one 6, and the remaining 4 or 5 of the specimens.

QUIZZES.

The Quizzes, under the auspices of the Alumni Association, will be held during the course of 1885-'86, on every Thursday afternoon, in the Alumni room, The Quiz for the Senior Students from 3 to 5, and for the Junior 2 to 3 P. M. The price of the Senior tickets for the two hours' Quiz are $10.00, and upon graduation, the certificate of membership will be presented, thereby making the member of the Senior Quiz Class, when he graduates, an Active member of the Association, without further cost.

The attention of students is earnestly called to the above, as conducted by the Alumni Association. There may be some who do not appreciate the objects and advantages of them, and to such a few words will not be misdirected in this place. They are in no wise antagonistic to those conducted by the College itself. The Alumni Association is composed almost exclusively, not merely of graduates, but of practical pharmacists and chemists, whose lives are spent in the pursuit of these branches of knowledge as a means of gaining their livelihood. It inevitably follows, therefore, that they are *practical*, eminently so. Herein lies their great advantage—the Quiz Masters bring out prominently those parts which their every-day experience teaches them are of most practical value. The student's life as such does not close with the receipt of his diploma; *then* he is only just fitted to study properly, to profit by experience, to correctly observe and discriminate between facts; and the more study and experience he gets, the better for him as a practical pharmacist.

It must not be understood, from the above remarks, that these Quizzes are not directed toward preparing students for their examinations. On the contrary, the preceding lectures as delivered by the Professors are reviewed, and the salient points brought out, and the student, in addition, receives something more to take with him, and serve as a guide with which to direct future effort. It is hoped that students will avail themselves of this opportunity of receiving thorough quizzing, and thereby also aid the Association to still further carry on its work to their advantage and the benefit of the student.

Those who have been members of the Alumni Quizzes during the past four years can testify to their advantage to the student.

The hours of holding the Quizzes are subject to change to suit the convenience of the majority of the class.

For further particulars, address Wm. E. Krewson, Secretary, at the College, No. 145 N. Tenth street, or 1829 N. Eighth street.

MICROSCOPY.

In the past year the Association has started a class for the microscopical examination of drugs. The application of the microscope to practical use in pharmaceutical study is becoming more and more general, and is recognized by the highest authorities as one of the essentials. The externals of drugs are no longer sufficient for their identification and correct study. With the large number of new ones constantly being brought forward, and the general sophistication of all in use, so many of which are externally very similar, the microscope is the pharmacist's friend in need. It is intended to teach the most approved methods of microscopical manipulation and investigation; also the preparing and mounting of different classes of objects.

The Class in Microscopy will meet on Fridays during the Course of Lectures, from 2 to 4 P. M., and will be under the care of Mr. A. P. Brown, Ah. G., a practical microscopist.

The course will consist of twelve or fifteen practical lessons, as follows :—

Microscopical Manipulations, Drawing with Camera Lucida, Urinary Analysis, Quantitative and Qualitative, Section Cutting, Double Staining, Dry and Wet Mounts, Photo-Micography, Detection of Adulterations, Finishing Slides, etc.

Price of Tickets, $10.00 for the course.

For further information, address the Secretary, at College, No. 145 N. Tenth street.

ALUMNI PRIZES.

The GOLD MEDAL to the best student of the Graduating Class.

Certificates for excellence in the studies of Chemistry, Pharmacy, Materia Medica and Pharmaceutical Manipulation and General Pharmacy.

Also, a Testimonial to the best student of the Junior Examination.

A prize for Botany will be given at the Annual Reception of the Graduating Class, for the best collection of plants correctly analyzed and gathered during the coming Spring and Summer months.

List of those who have joined the Association since the annual meeting :—

Thomas W. Wilson,	Class 1878.	Henry G. Heider,	Class 1885.
William H. King,	" 1884.	Alex. G. Keller,	" 1885.
Albert E. Brown,	" 1885.	Wm. F. Seiler,	" 1885.
Max Bartel,	" 1885.	Saml. C. Webster,	" 1885.
Frank Morse,	" 1885.	Charles B. Whilden,	" 1885.
Robt. S. J. Mitcheson,	" 1885.		

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DRUG SHOP BOTTLE

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A NEW AND ORNAMENTAL FORM OF DISPENSING BOTTLE.

MOUNTED ON FOOT OR BASE.

ROUND SHOULDER.

SQUARE SHOULDER.

It furnishes handsomely, being beautiful and symmetrical, and is a great improvement over the old-fashioned square bottom bottle so long in use. The contrast is as marked as between an ordinary tumbler and a handsome goblet. A drug store fitted out with these bottles presents a very attractive appearance, and they are a graceful and ornamental feature.

They are stronger than the ordinary bottle, as the concussion which would shiver the latter does not break off the base of the new bottle. Not one bottle of 300 in use in one store was broken in a period of three years. No one who has put them in use would exchange for the old style.

PRICES.

TINCTURES.

	Height		
Half-pint,	height, 9½ inches.	Per doz.,	$2 65
One pint,	" 11¾ "	"	3 25
Two pint,	" 13¾ "	"	4 00
Four pint,	" 16 "	"	6 00

SALT MOUTHS.

	Height		
Half-pint,	height, 8¾ inches.	Per doz.,	$3 10
One pint,	" 10½ "	"	3 60
Two pint,	" 13¾ "	"	4 50
Four pint,	" 15 "	"	7 00

The difference in height between this and the old style bottle is an economical feature inasmuch as three lines of shelving will answer where four were formerly required, and the smaller number of bottles brings their cost to about the same as the ordinary ware.

Number of bottles required to cover ten feet of shelving.

Half pint, 2 10-12 doz. One pint, 2 8-12 doz. Two pint, 2 2-12 doz. Four pint, 1 8-12 doz.

Glass labels running lengthwise, with two or three lines of lettering, suitable for this style of bottles, 18 cents each. Ordinary style of Indestructible labels, 12 cents each.

NOTHING CAN SURPASS THE BEAUTY OF THESE DESIGNS.

WE SUPPLY THE ORDINARY STYLE SHOP BOTTLES AT FOLLOWING PRICES:

TINCTURES.

	x Warner & Co.	xxx Whitall, Tatum & Co.
Half-pint,	$1 05	$2 75
One pint,	1 60	3 25
Two pint,	2 00	4 00
Four pint,	3 30	6 00

SALT MOUTHS.

	x Warner & Co.	xxx Whitall, Tatum & Co.
Half-pint,	$1 12	$3 13
One pint,	1 65	3 63
Two pint,	2 38	4 50
Four pint,	3 50	7 00

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Very respectfully, B. G. LOVEJOY,
Secretary.

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Brown's Essence of Jamaica Ginger.
" Cholera Mixture.
" Preserved Taraxacum Juice.
" Mutter's Cough Syrup.
" Bitter Wine of Iron.
" Cooper's Anti-Bilious Pills.
" Chapman's Anti-Dyspeptic Pills.
" Wistar's Cough Lozenges (from original prescription).

Brown's (Mrs. Harvey's) Cough Syrup.
" Dentrifice, in bottles.
" Dentrifice, in tin canisters, suitable for travelers.
" Arabian Racahout, in convenient bottles.
" Camphorated Chalk Dentrifice.
" Fluid Extract Buchu.
" Anti-Dyspeptic Powder.

These preparations are all manufactured with great care, from the best and most carefully selected materials. Many of them are the prescriptions of eminent Physicians, and have been used and prescribed for a long series of years. Each preparation is warranted to be as represented.

SOLE PROPRIETOR AND MANUFACTURER OF

BROWN'S ESSENCE OF JAMAICA GINGER.

Sole agent for the United States for **Dejardin's Syrup of the Red Malta Oranges** (Sirup D'Oranges Rouges de Malta) so justly celebrated for its exquisite taste and flavor, as well as for its refreshing properties.

Dejardin's Syrup of the Red Malta Oranges is an exquisite production, and only requires to be known to be appreciated. For Soda Water it is wonderfully well suited, and in warm weather with Ice Water makes a delicious beverage.

Dejardin's French Extract of Malt. This extract of Malt contains in a perfect state all the active principles of Malt and is at the same time an aliment, a tonic, and a very agreeable beverage. Also

Dejardin's Chocolate and Malt.
Dejardin's Malt Biscuits.
Dejardin's Bon Bons, Malt and Coca, Tonic and Digestive.
Dejardin's Pectoral Bon Bons.